

**ARCHITECTURAL**

**R E C O R D**

BUILDING TYPES STUDY NO. 171

**INDUSTRIAL BUILDINGS**

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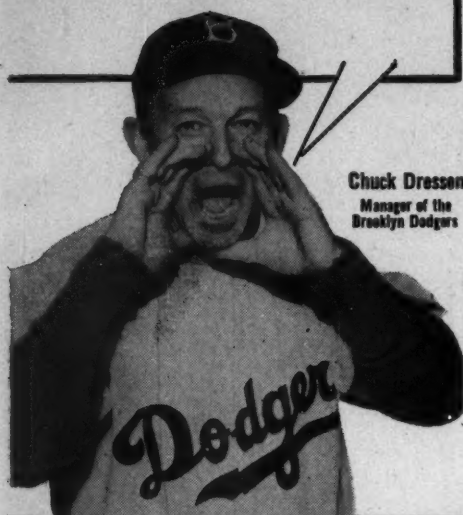
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# MIAMI, Here We Come!



Chuck Dresson  
Manager of the  
Brooklyn Dodgers

## 'INCOR' SPEEDS COMPLETION OF MIAMI STADIUM

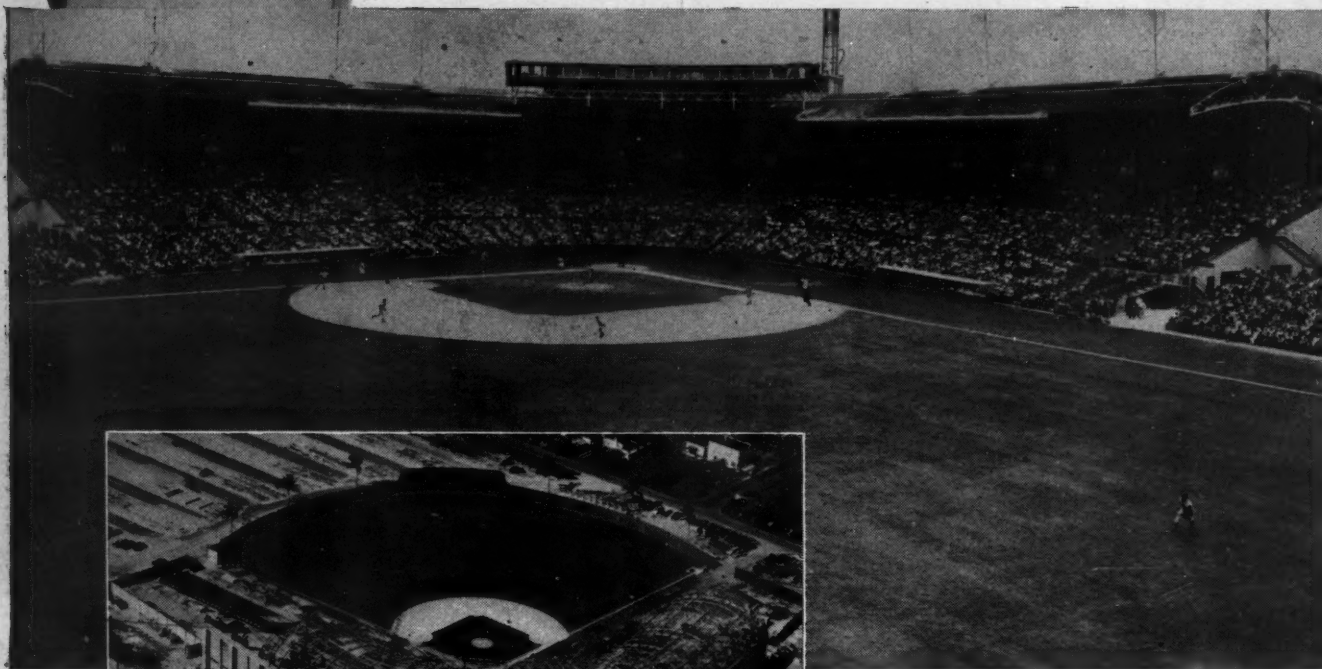
### BASEBALL'S NEWEST SPRING-TRAINING CENTER

● "Finest structure in minor-league baseball," says Walter F. O'Malley, Dodgers' President, of beautiful Miami Stadium, new Spring-training base of the Brooklyn Dodgers.

With a grandstand seating capacity of 9,500 and room for 7,500 in bleachers and temporary stands, Miami Stadium offers every spectator an unobstructed view of the field. To speed completion, the contractor used 'INCOR' 24-HOUR CEMENT in concreting the 6 x 6 ft. columns anchoring roof trusses and for foundations of eight 140-ft. light towers. Result, job completed *three weeks ahead of schedule.*

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\*Reg. U. S. Pat. Off.



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MIAMI STADIUM, INC., Miami

Contractor:

TAYLOR CONSTRUCTION COMPANY, Miami

Architects:

MARR & HOLMAN, Nashville, Tennessee

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Saves men because less time and labor are required in providing open wood centering and form work.

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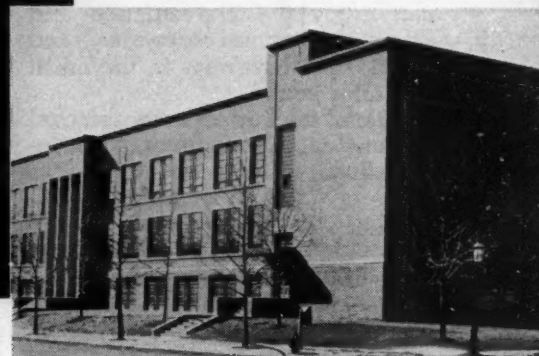




**HOSPITALS**—Ceco Concrete Floor Joist Construction is ideally suited to hospitals since it provides fire-safe, sound-proof buildings at economical cost. Widely used in Veterans Hospitals.



**COMMERCIAL BUILDINGS**—Ceco's Meyer steelform method speeds construction: the simple skeleton centering goes up fast; the forms are quickly placed and removed by unskilled labor.



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*Saves* material because only a minimum of critically short steel is needed—and even here less concrete is necessary than required by other concrete floor constructions.

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## SNOW MELTING for Winter Protection BYERS WROUGHT IRON PIPE for Corrosion Protection

As a further expansion of service, the Stratfield Hotel, Bridgeport, Connecticut, recently installed a snow melting system so its guests can enjoy the convenience and safety of "summer sidewalks" and clean, safe driveways in the midst of winter snows.

One of the largest snow removal systems in Connecticut, this installation required about six tons of Byers Wrought Iron pipe for the heating coils. In winter, hot water is circulated through these coils, melting snow as it falls and keeping the main drive, service entrance, and sidewalks continuously clear. An anti-freeze solution is added to the water to prevent freezing when weather conditions do not require the system to function. This system will eliminate snow-shoveling crews and expenditures for cinders or other materials designed to keep access areas hazard-free.

The snow melting installation was part of an extensive alteration-rehabilitation project of the hotel's main restaurant and kitchen which was handled by Westcott and

Mapes, Inc., Architects and Engineers. The system was installed by Kecko and Son, Heating Contractor.

Snow melting systems, utilizing Byers Wrought Iron pipe, are currently serving in walkways, loading platforms, garage driveways, service station aprons, and in roadways serving both homes and industrial plants. This ever-increasing acceptance is the best possible evidence of snow melting's remarkable performance record.

Wrought Iron is ideally suited for this service because of its combination of essential qualities. Its corrosion resistance has been repeatedly proven over periods of many years in identical service conditions. It is easily formed and welded, speeding installation. Its heat emission is high. It expands and contracts at virtually identical rates with concrete. And it has ample mechanical strength to withstand damage during installation.

If you would like additional information on this important development, write for our Case History No. 5 on Snow Melting Systems.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, San Francisco. Export Division: New York, N.Y.



### WHY WROUGHT IRON LASTS

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# BYERS

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# ARCHITECTURAL RECORD



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Houston Coca-Cola Bottling Co., Houston, Tex. Stone & Pitts, Architects and Engineers. Photograph by I. B. Lindenthal

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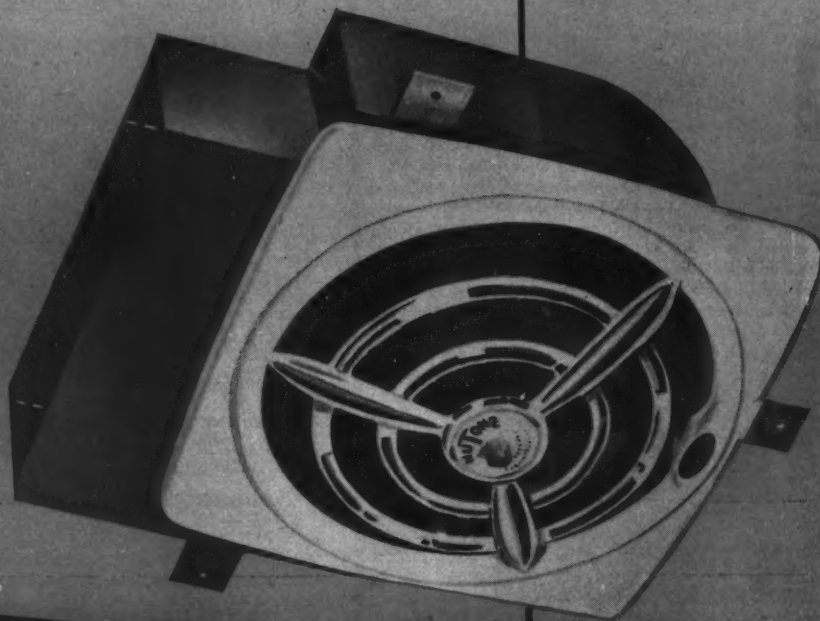


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# THE RECORD REPORTS

## BUILDING PATTERN CHANGED BY NPA FREEZE ORDER

*Amended M-4 Order Temporarily Freezes Commercial Construction — Designed to Save Steel for Industrial and Defense Building — Impact on Civilian Building Not Yet Clarified*

THE NPA ORDER limiting commercial building activity tends to change the over-all pattern of the nation's 1951 building program, but not necessarily toward reduction of the year's total building volume. The ostensible purpose of the order is to conserve critical materials now going into commercial buildings for use in industrial and power plant projects essential to defense and for military construction required by the armed services.

The text of the order may permit either fairly strict or fairly liberal interpretation in accordance with the exigencies of the material supply situation as they may develop. At some stage, peak demand for military and defense plant construction will pass, and urgent needs for neighborhood stores, office space, warehouse facilities and other commercial facilities will have accumulated. In the meantime, production of critical materials will have increased. Consequently, it seems reasonable to look forward to a time when commercial building activities may be resumed on a scale adequate to the basic needs of the civilian economy.

The order simply halts all starts in the commercial building categories listed until Feb. 15, after which construction is to be permitted in cases where the project "further the defense effort, is essential to public health, welfare or safety, or will alleviate or prevent a hardship to a particular community."

Obviously these phrases leave considerable room for a great deal of commercial construction. And there were assurances that government expects a considerable program to go ahead. But the lines were by no means clearly drawn, hence the speculation over the need to save steel, the building program needed

for defense, and what would remain for civilian building projects.

The confusion arises over administration and interpretation. Disagreement along these lines has already brought the unfortunate resignation of James W. Follin, who was slated to administer the order. The stated point of contention was the time allowed for setting up an organization to administer the program and issue "authorizations" for building in the exception categories listed in the order.

Reason given for the quick action was that structural steel was scarce, with delivery times on orders running as high as 10 to 12 months. Structural steel was needed for the construction of new steel plants. Regardless of over-all steel producing capacity, it was said, facilities for structural steel and structural shapes were overloaded.

Thus the order was designed to provide some breathing time in the rush to order structural steel. The expectation, then, was that in the interval the picture could be clarified and steel allotments put on a more orderly basis.

### **No Priorities This Time**

The construction industry was pleased that the order used the term "authorizations," rather than "priorities." Washington remembers with horror the last war's record of meaningless priorities, and is working currently toward something like the controlled materials plan. There was also talk of local issuance of "permits" in place of centralized federal handling, but the terms of the order were not specific in this regard.

Early speculation turned also to the use of substitutes for steel construction. It was pointed out that, if steel shapes were in fact the principal reason for the

order, much commercial construction was possible without this kind of steel.

### **Military Needs**

It was pointed out also that mobilization this time does not indicate any immediate need for military construction on anything like the scale of the last war — in large part it was built for World War II, and is still in place. The tank program, on the other hand, starts from scratch, and it will require huge quantities of steel. The ship program is by no means what it was in World War II. Altogether the steel requirements permit a great deal of speculation, though of course other scarce metals figuring in construction were also to be included in the final reading of construction to be permitted.

In Washington, observers were pointing out that there are two opposing schools of thought — one for all-out controls as fast as possible, one for reasoned programs in advance. The resolutions of a large number of debates over this boundary will figure in the final answers.

In any case, commercial categories of construction have felt the wartime call to sacrifice, though the extent of the sacrifice is not yet determined. Other types can see the finger pointing in their direction (it is clearly so stated in the amended M-4 order). Architects and engineers will figure in dislocations, as projects are cancelled or at least delayed. There will probably be a period of sitting on the sidelines.

But, as has been pointed out, one thing is incontrovertible — however construction shifts, there will still be construction in some form to the full capacity of building materials production. And that is a lot of construction!

## \$1,000,000 SURFRIDER HOTEL IS UNDER WAY AT WAIKIKI

THE SURFRIDER, Matson Lines' \$1,000,000 Hotel on Waikiki Beach, was rising above completed foundations by the beginning of this year; and the owners were hoping it would be ready for visitors to Honolulu by early next winter.

Wimberly and Cook of Honolulu and Gardner A. Dailey of San Francisco are the architects for the seven-story structure.

Of reinforced concrete construction, the new hotel will have 144 rooms, most of them with their own open lanais facing the beach. Other rooms will look toward the mountains. The main floor will be occupied by shops, facing Kalakaua Avenue.

The building is going up on land owned in fee by Matson since 1925, immediately adjoining the Moana Hotel on the Diamond Head side.

In preparation for designing the hotel, the architects visited several of the outstanding new hotels throughout this hemisphere. Mockups of proposed rooms were constructed on the site of the Surf-Rider to test room areas for convenience and atmosphere and also to serve as a testing ground for furniture, rugs, draperies and accessories.



Photo of rendering shows main entrance of Abraham & Straus-Nassau Store at Hempstead

## A. & S.-NASSAU STORE DESIGNED TO PROVIDE MAIN-STORE FACILITIES IN OUTLYING AREA

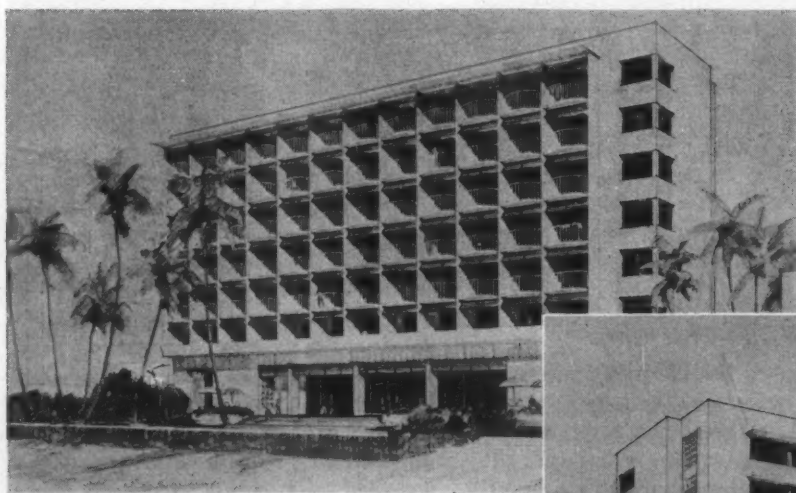
ABRAHAM & STRAUS of Brooklyn provides an outstanding example of a notable trend as construction goes forward on its \$2,500,000 Nassau Store at Hempstead, L. I.

But A. & S., which recently added a Garden City branch, considers that it is also taking a direction of its own. Every department in the main store will be represented in the Nassau operation, where A. & S. plans to provide "a down-

town store's services and variety and depth of stock in a store away from the central district."

The building will have 225,000 sq ft of floor space with two stories and basement, and is designed to permit addition of two more floors. Construction is reinforced concrete, exteriors brick.

Three spaces will provide parking for more than 1000 cars. Delivery trucks will use a ramp under the parking lot.



Left: Open lanais face the sea. Most of the SurfRider's 144 rooms will have an ocean view. Below: the opposite facade faces Kalakaua Avenue, looks to the mountains. Shops will occupy the first floor



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Engineers and builders are The Austin Company. Marcel Breuer is consulting architect on exteriors; Daniel Schwartzman and Peter Copeland Associates are consulting architects on interiors. Consulting engineers are Meyer, Strong and Jones; and Herbert G. Davenport, A. & S. Director of Design, is coordinator of architectural design and layout.

## DO U. S. ARCHITECTS LAG? NEW TOWNS NEEDED: FEISS

AMERICAN ARCHITECTS get a gentle nudge from one of their own number in a recent letter to ARCHITECTURAL RECORD from Carl Feiss, chief of the Community Planning and Development Branch of the Housing and Home Finance Agency.

The letter follows:

"My compliments to you on your excellent editorial on 'City Planning and Civil Defense' in the December 1950 issue of the ARCHITECTURAL RECORD and the very fine article by Michael Rosenauer, 'Britain Builds Her New Towns.'

"It is very encouraging to me that the ARCHITECTURAL RECORD is featuring planning at this time. From every point of view nothing could be more important to the welfare of our communities than the strengthening of the interest of architects and technicians in these matters. There are all too few American architects and planners today working in the field of urban improvement and of new towns. The leadership which Great Britain is showing in the building of new cities is to be looked at by our architects and planners with some regret. All too often we wait for others to experiment. After such experiments elsewhere, we try to adapt for our own use ideas which are not necessarily correct for our own culture and geography.

"It is to be hoped that new towns will be built in the United States. It is also to be hoped that these new towns will develop from our own necessity, taking cognizance of the successes and failures of others' experiments. It is also to be hoped that our old towns will be given much greater care in their rebuilding and redesign, since so much work has to be done to make them habitable and worth preserving.

"The role of the architect in city building can prove of benefit to this country in peace and times of emergency, and the better acquainted he becomes with city building problems, the better able he will be to serve his country adequately in the future.

"Once more, congratulations on a fine job."

## ARCHITECTS, ENGINEERS AND SELECTIVE SERVICE

### *Sane Policy Must Govern Mobilization of Professional Personnel*

MANPOWER does not consist of equivalent interchangeable units. Consequently, machinery for supplying the needs of general military service must provide for maintaining an adequate flow of competent professional and specialized personnel in both civilian and military pursuits.

World War II demonstrated the wide variety of fields of learning called upon for the national defense. Engineering and architecture; the physical, biological and social sciences; medicine and the humanities — all made essential contributions. This all-important lesson must not be forgotten in the present emergency. We must not allow any of these fields to become undermanned.

One proposal frequently put forward to achieve this purpose recommends that all college students preparing for "essential" professions and sciences be deferred under Selective Service and permitted to continue their training. There is danger in such a plan, since it is based on the fallacy that someone possesses a crystal ball that will enable him to determine which fields of knowledge are "essential" and which "non-essential." If such a list had been drawn up fifteen years ago without the benefit of present hindsight, it is entirely possible that nuclear physics and study of the Japanese language would both have been placed in the latter category — greatly to the detriment of weapon development and combat intelligence in World War II.

The pitfalls inherent in establishing any such lists, together with recognition of the wide variety of training required for maintenance of civilian and military activity, were primary factors in the recommendations presented to the Director of Selective Service in December, by his Advisory Committees on Scientific, Professional and Specialized Personnel. The basic recommendation calls for establishing a special class of registrants within the Selective Service System for the person "... whose demonstrated educational aptitude is such that ... his pre-professional or professional training program [should] be continued in order to increase his potential value to the national health, safety, and interest." Educational aptitude would be defined as a specified minimum score on a general classification test and a record of previous educational accomplishment sufficiently high to indicate special promise of eventual scientific, professional or specialized competence.

Essentially, the scheme permits promising students to complete their education regardless of the curriculum they are following. It is not an exemption from national service, but a postponement, since persons so classified would remain subject to call until they reach the age of 26 plus the number of years authorized for training.

If this plan is adopted, we will not be storing up for ourselves a repetition of today's critical shortage of architects and engineers possessing five to ten years' experience. Our present plight is traceable directly to the mistaken manpower policy that all but extinguished the operation of architectural and engineering education from 1942 through 1945. It is definitely in the interests of all the design professions to vigorously support the plan recommended by General Hershey's Advisory Committees.



Editor-in-Chief



## BOMB SHELTERS: WHAT KIND AND WHEN? CIVIL DEFENSE PROGRAM MOVES SLOWLY

THE CIVIL DEFENSE PROGRAM develops slowly. This ponderous plan for protecting a nation of more than 150 million against attack from a potential enemy power contemplates widespread construction of communal-type bomb shelters. But it will be a long, long time before these defenses, particularly those of the underground type, are ready for use.

The initiative for planning, financing and constructing such shelters is being thrown to the local community by the federal government. Uncle Sam has the authority now to assist, moneywise, in the construction of certain non-self-liquidating types of shelter to the extent of furnishing half the funds. An administrative force is being set up in Washington, but this is moving slowly.

The architect, who has an important function in the design of these large shelter areas, is being urged to aid his

local community at every turn in the difficult and complex task of preparing defenses. The American Institute of Architects has advised its members to become active in local groups tackling the shelter problems.

As of mid-January, here is what had been accomplished at the federal level:

Congress had passed, and the President signed, the \$3.1 billion federal civil defense bill. This formed the nucleus around which activities of the new Federal Civil Defense Administration were taking shape. Known as the Federal Civil Defense Act of 1950, this law paves the way for federal participation in the local community plans. Appropriation of funds to implement the authority is awaited before tangible financial assistance can go to the local groups. The President's budget for fiscal year 1952 — starting July 1 — carries \$265 mil-

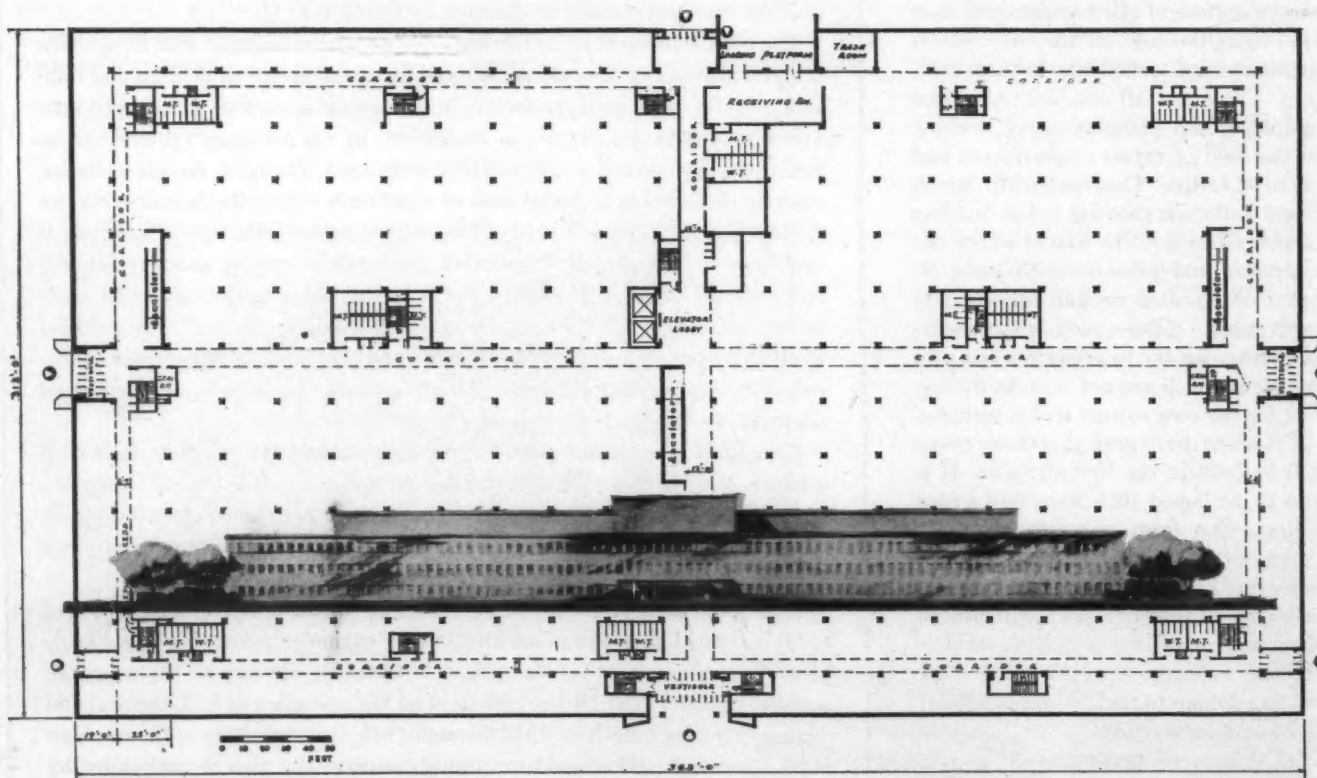
### *Voluntary Protection of Technical Data Gets Aid*

The Office of Technical Services of the U. S. Department of Commerce, Washington 25, D. C., now provides a service to help the public guard against harmful release of technical information, even though it is not subject to formal security restrictions.

OTS will transmit expert opinion on any specific query to the inquirer, who is free to accept or reject such advice.

lion in cash and additional obligational authority in the amount of \$450 million for civil defense. It specifies \$10 million for fiscal 1951 appropriations.

(Continued on page 238)

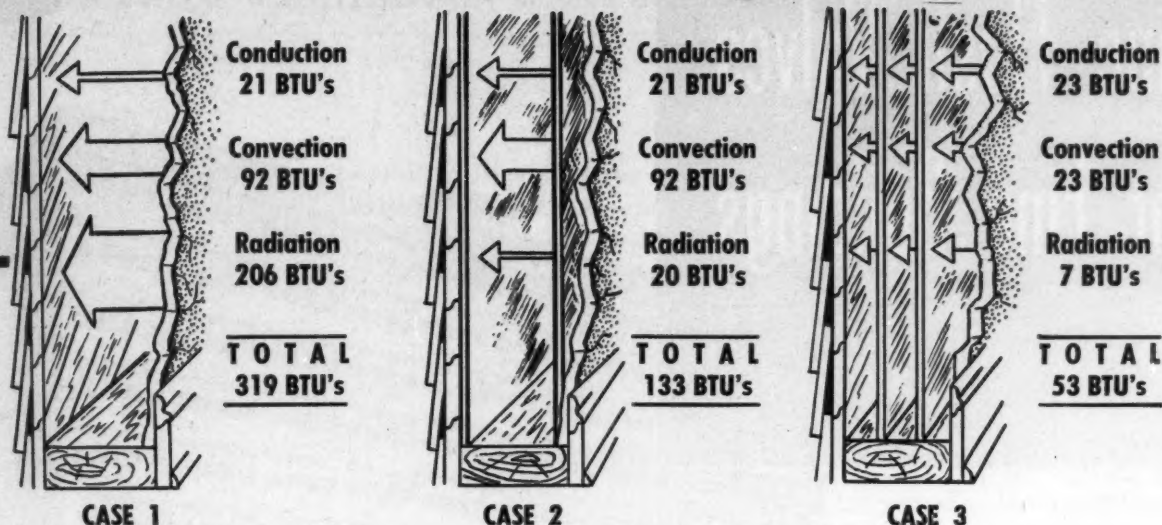


### GSA PRESENTS DISPERSAL PLANS

Plan above shows first-floor scheme for four buildings that would be erected as initial phase of General Service Administration's proposal to meet the threat of atomic attack on Washington by dispersal; inset on plan is rendered elevation. The program, as

presented to Congress by GSA's Public Buildings Service, calls for moving 40,000 government workers out of downtown Washington into eight new structures to be erected on a circle 15 to 20 miles from the White House. They would be block-type, not more than three or four stories in height, with exterior windows but no interior courts or wings. "Bombproof" construction is not proposed

# In an uninsulated wall space, 65% to 80% of all heat flow is by RADIATION



## CASE 1

**An uninsulated wall space.** The surfaces of ordinary building materials, including ordinary insulations, have a Radiation or emissivity rate of more than 90%, a heat ray absorption rate of over 90%. Air has slight density, so Conduction is slight, 21 BTU's. There is nothing to block convection, 92 BTU's. Note: 206 BTU's out of total 319 BTU's going through this wall space was Radiation.

## CASE 2

**The same wall space except that** inner surfaces were lined with sheets of metal of 15% emissivity and absorption. Note drastic drop in heat flow by radiation, from 206 BTU's to 20 BTU's. Conduction and Convection stay the same. Original total of 319 BTU's dropped to 133 BTU's.

## CASE 3

**Two sheets of 15% emissive metal divide the wall space into 3 reflective compartments.** Heat loss by Radiation dropped to 7 BTU's against original 206 BTU's. The 2 sheets blocked Convection so that its flow fell from 92 BTU's to 23 BTU's. Conduction rose only 2 BTU's; from 21 to 23 BTU's. The total flow in BTU's dropped 85% from the original 319, to 53 BTU's.

The aluminum used in multiple sheet accordion insulation has emissivity and absorption rates of only 3%, or 5 times better than the 15% cited. Type 4 Infra, a commercial form of multiple aluminum, has 3 blocks to Convection heat flow, and Type 6 Infra has 5 blocks, against only 2 cited in Case 3.

*NOTE: Figures based on booklet, "Insulating Effect of Successive Air Spaces Bounded by Bright Metallic Surfaces," published by the American Society of Heating & Ventilating Engineers. Free copy will be sent by Infra; just use coupon.*

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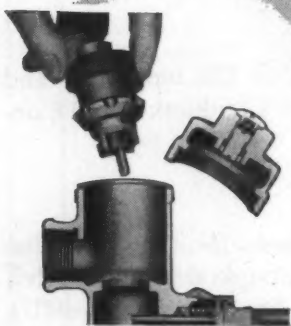
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## THE RECORD REPORTS

### NEWS FROM WASHINGTON by Ernest Mickel

#### ***Role of Private Industry Stressed in New Housing Bills Emphasizing Rental Units; Military Speeds Procurement, Gets Building Funds from \$20 Billion Defense Measure; \$10 Million Added to Hospitals; A.I.A. Asks Dispersal***

HOUSING FOR DEFENSE WORKERS got an early priority in the legislative program of the 82nd Congress.

The substantial need along these lines was evident in Atomic Energy Commission plans already taking shape and was certainly implied in the billions of dollars worth of new plant construction either certified in connection with defense or applied for.

Congress aimed a five-pronged measure at these problems, hoping to find a solution in using many of the older financial aids with modifications. Among the earlier bills to be considered were the defense housing bills introduced early in January by Senator Burnet Maybank (D-S. C.), and Rep. Brent Spence (D-Ky.). With White House and Budget Bureau blessings, these measures were the result of many weeks of labor on the part of several agencies, particularly the Housing and Home Finance Agency and the Budget Bureau, which worked closely with the Banking committees of Congress.

They were encouraging from the standpoint of stressing the role of private industry in the huge proposed program of defense housing construction. This emphasis was evident from the inclusion of special Federal Housing Administration insurance covering the building of both one- and two-family housing units, and garden-type multiple-family units.

These specific points were covered in the Maybank and Spence measures:

1. The FHA insurance aids. No amount was stated in the bills, but Senator Maybank had told reporters a \$3 billion fund might be requested as authority to cover all FHA insurance programs — defense and non-defense housing alike.

2. Federal loans and grants to provide, operate and maintain in defense

areas such community facilities as water lines, sewer lines and similar utilities necessary to expanding housing.

3. Authority for the federal government to provide direct defense housing, a form of public housing, perhaps \$200 million worth. The Banking committee chairman agreed that as far as possible, such housing should be of the permanent type. The trend now is to disfavor the temporary shelter, so much of which was erected under federal guidance during the last war.

4. Authority for acquisition of land for housing and community facilities in connection with the defense housing to be built. One of the primary aims of such a move, it was understood, was to fore-

stall the wild land speculation that is bound to develop with announcement of new government installations. This part envisions re-sale of the land, semi-developed, by the government to private enterprise for the construction of the housing and commercial structures.

5. Finally, the proposed legislation called for \$15 million in loans to the producers of prefabricated housing. Purpose here would be to keep recognized prefab manufacturers in their present business. Without the financial incentive they might turn in great numbers to other types of production. The need for prefabricated housing units is felt to be acute.

#### ***Rental Housing Emphasized***

The legislation also provides for extension of the Wherry-Maybank bill (Title VIII of the National Housing Act) beyond its June 30, 1951 expiration date and its extension to include the Atomic Energy Commission in addition to the Army, Navy and Air Force. This program is working well now, with private architects and builders planning and constructing rental housing for the services under FHA insured mortgages. If Congress widens its application to include the AEC, its volume probably would step up considerably. There will be room in the current defense housing

(Continued on page 16)



— Drawn for the RECORD by Alan Dunn



## THE RECORD REPORTS

### WASHINGTON

(Continued from page 15)

program for both the Wherry Act and the new legislative aids now being worked out by Congress.

There was no mention of how many units the new Maybank and Spence bills would authorize. This figure depended upon many factors such as subsequent appropriations for the direct portions, costs, and administration.

The FHA section has been written with a view to giving rental housing the broad right-of-way over sale. This is because officials believe rental types are those which can serve more advantageously the needs of workers moving into new areas. It was explained that the FHA section, as written in the bills, is somewhat more liberal than the existing permanent peacetime aids supplied through FHA. But it will not be as liberal as the old FHA Title VI available to builders during World War II and the years immediately thereafter.

The Spence statement issued when the bill was introduced casts some light on the purpose and plan for the new grants and loans for the facilities portion of the program. It stated:

"There will be many defense areas where community facilities must be provided. There will be some areas where, until necessary water and sewer lines and other facilities are provided, it would be difficult to secure the building of needed additional housing. The legislation will make provision for federal assistance through loans and grants for the provision and operation and maintenance of the various kinds of facilities needed for carrying on community living in those areas where it is found that they are needed to support national defense activities."

A sum of \$100 million was proposed as the amount covering these loans and grants, though it is not stated in the legislation as first introduced. A similar amount was suggested for the purchase and development of raw land. On this latter point, Spence explained:

"The situation with respect to projects like the Savannah River project (near Aiken, S. C.) of the Atomic Energy Commission, however, indicates that additional legislative authority is needed to meet such cases. For this purpose, it

(Continued on page 18)



Aluminum Company of Canada, Ltd., Photo

Photo above shows main facade of a new showroom for a firm of automobile dealers in Toronto, Ontario. Trim is aluminum. Gordon S. Adamson of Toronto was architect

### NEWS FROM CANADA by John Caulfield Smith

#### Uncertainties Stressed in Preview of 1951 Building

NOTHING IS CERTAIN about the building picture for 1951, says *The Financial Post*, Canada's leading business newspaper.

Outlook is for a year of continuing activity at capacity levels in all branches of construction, with only limiting factors the availability of certain materials, notably iron and steel products, and skilled workers. Higher costs appear indicated.

The biggest question-mark is where the emphasis in building will be placed.

Possibility of a preparedness slowdown if the Communist world moves toward peace is regarded as academic by the *Post*. It points out that there's at least an equal chance that 1951 will see the West engaged in an all-out struggle for survival.

If this happens, striking gains in the industrial category are forecast, with limitations placed on residential and commercial building.

Increase in defense construction so far is not substantial in relation to the total \$2½ million program of construction carried out this year. But it is being imposed at a time when the industry's resources are already strained. Other aspects of the defense and allied programs are apt to aggravate the situation

further. More priority allocations and restrictions may have to be imposed.

Leaders say they seek to serve 1951 demand by expanding construction capacity and are appealing to private enterprise and all levels of government to defer low-priority projects. If this is done, they feel confident of their ability to meet defense and essential civil building needs quickly and efficiently.

#### 11-Months Figures Put 1950 40 Per Cent Ahead of 1949

EVEN IF December's contract awards should total only half as much as those of December 1949, new construction in 1950 will have reached the highest level in the country's history: \$1.5 billion.

In November, value of construction contracts soared to \$161.2 million — over \$44.0 million or 37 per cent higher than the awards for November a year ago.

Cumulative figures for the first 11 months of 1950 now have reached \$1423.3 million or \$404.7 million above the same period for 1949. This is a 40 per cent increase.

Pointing out that the November total is only \$3.4 below the midsummer peak, MacLean Building Reports comments

(Continued on page 228)

# *And in Seattle* - A FUTURE OF FAULTLESS SERVICE

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## THE RECORD REPORTS

WASHINGTON (Cont. from p. 16)

may be necessary to provide authority for the acquisition of the land for housing and community facilities required in connection with such a defense installation, to prepare general plans for the development of the necessary housing and community facilities on such land, to install the various public improvements required to permit the proper development of the land, and then to sell such land for the construction of

housing and various commercial structures by private enterprise."

It is obvious that drafters of the legislation did not feel the entire defense housing job could be left to private enterprise. Therefore, the direct federal construction of units was provided "where such housing is required for necessary defense purposes and would not otherwise be provided when and where needed."

Both Spence and Maybank claimed experience has shown that such supplemental legislative authority is an essential part of an effective program to assure the provision of defense housing which may be required.

And here is the explanation for the \$15 million loan program for prefabricated housing producers:

"The legislation also recognizes that, in the course of our mobilization activities, we may have particularly urgent needs for prefabricated housing or housing components. We have a prefabricated housing industry which is now producing at the rate of about 50,000 units a year. It appears desirable that we assure the maintenance of this industrial capacity, and that those with a demonstrated capacity to produce and market their product remain in the business of producing and marketing prefabricated housing and housing components rather than converting to some other type of production. The legislation will, therefore, provide assistance for those business enterprises with a demonstrated capacity for the production and marketing of prefabricated houses and housing components, including the distribution of such houses and components and related purposes."

### Housing Groups Protest

With the earliest announcement of the Administration's plans private housing groups protested that the measures went too far in giving the housing administrator unprecedented control over the programs. The National Association of Real Estate Boards and the National Association of Home Builders both expressed fear that the bills, as drafted, leaned too heavily toward blanket authority for the administrator in the public housing phases.

The housing agency, on the other hand, was known to feel that current requirements for housing in certain defense areas of the country, and the positive known demands soon to develop elsewhere, would justify the broad nature of the legislation.

Take the Atomic Energy Commission's new Savannah River development as an example. AEC has announced it would not construct an entire town in connection with this South Carolina installation as it has done at Oak Ridge, Tenn., Hanford, Wash., and in some other places. All housing required, except for possible temporary barracks,

(Continued on page 20)

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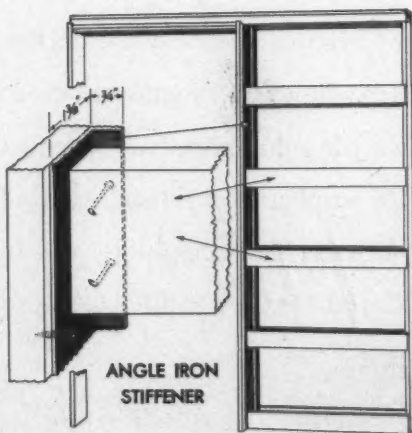


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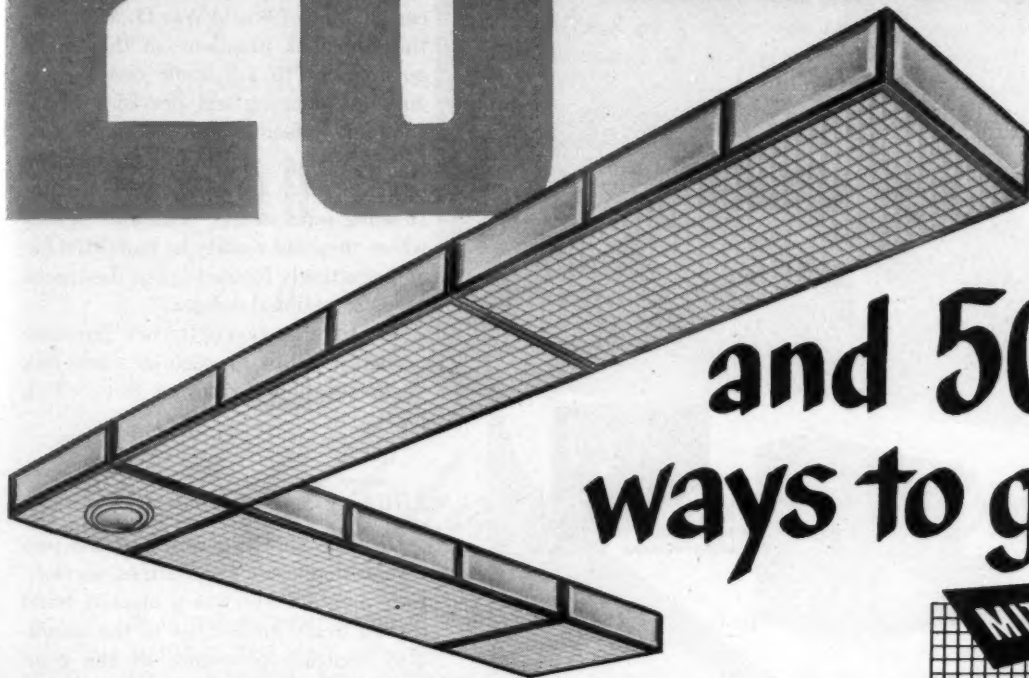
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## THE RECORD REPORTS

WASHINGTON (Cont. from p. 18)

will be constructed by private home builders. HHFA believes that it might have to shoulder full responsibility for federal aid to provide this housing, and for other housing needs throughout the nation as the defense program quickens.

Administratively, it was almost a foregone conclusion that the Foley agency would handle details of the new legislation after its enactment. There was some discussion as to whether it would

be the work of Public Housing Administration and Community Facilities Service, already HHFA components, or whether a new branch would be set up within the housing agency to administer all defense housing. This point had to be worked out, probably would be influenced widely by testimony in hearings on the bills.

But this statement by Sen. Maybank clearly indicated the sentiment of his

office on this important subject:

"In the field of housing and community facilities, however, we are in a far better position than when we entered World War II. The home building industry, in a large measure, as a result of legislation reported by the Senate Banking and Currency committee and enacted by the Congress over the past few years, is in a much stronger position with a far greater capacity for production than was the case in the defense and early period of World War II. Moreover, the principal functions of the federal government to aid home construction and the planning and provision of the community facilities are no longer scattered among numerous independent agencies; they are now centered in the Housing and Home Finance Agency where they can readily be mobilized for, and effectively focused upon, the special needs of national defense."

The FHA portion of the new programs probably will be handled as a new title to the National Housing Act—Title IX.

### Military Speeds Procurement

Haste is the watchword in the procurement offices of the armed services. Last month there was a marked trend toward much greater use of the negotiated contract procedure as the competitive bid pattern drew less and less emphasis. In the preceding weeks widespread criticism—in and out of Congress—against the slow-moving procurement processes for defense materiel and services created a strong pressure for haste. An increasing urgency was evident. The Defense Department was drawing fire for what critics termed an obvious sluggishness in acquisition of needed supplies and services and the Munitions Board was subjected to accusations that it was dragging its feet in stockpiling critical and strategic materials.

Against this backdrop of freely-expressed public opinion, Gen. George C. Marshall, Secretary of Defense, issued a directive which carried considerable import for the construction industry and all suppliers. This told procurement officers to spread military contracts across industry as widely as possible. More importantly, it instructed that procurement actions be speeded in anticipation of the appropriation of new funds by the 81st Congress.

An obvious part of the move was a swing toward much greater use of the

(Continued on page 22)



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## THE RECORD REPORTS

### WASHINGTON

(Continued from page 20)

negotiated contract procedure. Defense let it be known that much of the buying scheduled from now on would be done through negotiation rather than the more usual practice of open competitive bidding.

This did not preclude, however, the existence of considerable competition among contractors in the negotiation process. Defense Secretary Marshall explained that formal advertising would continue in use "when appropriate," but he assured it would be dropped whenever interference with the acceleration of procurement or the spread of contracts was indicated.

Of course, the transition from open competitive bid to negotiation achieved the end objective, obtaining needed goods at a faster pace. But it had an important corollary. It took up the slack, so to speak, in many industries that faced dangerous cutbacks due to material shortages. There had been severe criticism of this, too—criticism that government was applying its material use orders (through National Production Authority) too rapidly. The dragging pace at which defense contracts were going out spelled disaster for many companies, particularly those using the scarce metals in their operations, these critics said.

Congress did its part by rushing through in the lame-duck session a \$20 billion supplemental defense spending bill for fiscal 1951. This carried construction funds for the bulk of new housing and public works authorized for Army, Navy and Air Force in the \$1.658 billion Vinson measure which reached the White House just ahead of it.

It was in anticipation of this action that the Marshall directive read in part: "The departments already have been instructed to speed up procurement actions in connection with the second supplemental 1951 funds requested so far as can be done in advance of its approval by Congress. In this acceleration of procurement it is essential that contracts be spread across industry in order to broaden the industrial base of the procurement program.

"Broadening the base will require wider use of negotiation. Formal advertising will continue to be used when



appropriate, but not when it will interfere with the acceleration of procurement or the spread of contracts."

### Army Changes Buying Rules

Simultaneously, the Army announced certain changes in its procedures governing acquisition of services and supplies. The decentralized purchasing offices located throughout the country would continue to handle all Army procurement, this announcement said.

The National Emergency declared by the President in December cleared the way for most of this acceleration of program.

Some of the details were cleared up in the Army statement. It read in part: "The fact that procurement is to be negotiated does not relax the requirements for competition. When supplies or services (including those of architects and contractors) are to be acquired by negotiation, price quotations and proposals are solicited from qualified sources to assure competition consistent with the needs in each case.

"Under negotiated contract procurement the Army purchasing office normally invites qualified suppliers to submit quotations accompanied by estimated production costs. Each supplier whose proposal is low enough to be considered is then ordinarily invited to separate conferences at which purchasing officers endeavor to secure the best possible contract, taking into account quality, delivery, price and other contract terms. The award is made to the supplier making the best final proposal."

It was made clear that suppliers who have been on lists for advertised bids will also be carried on lists for negotiation of contracts.

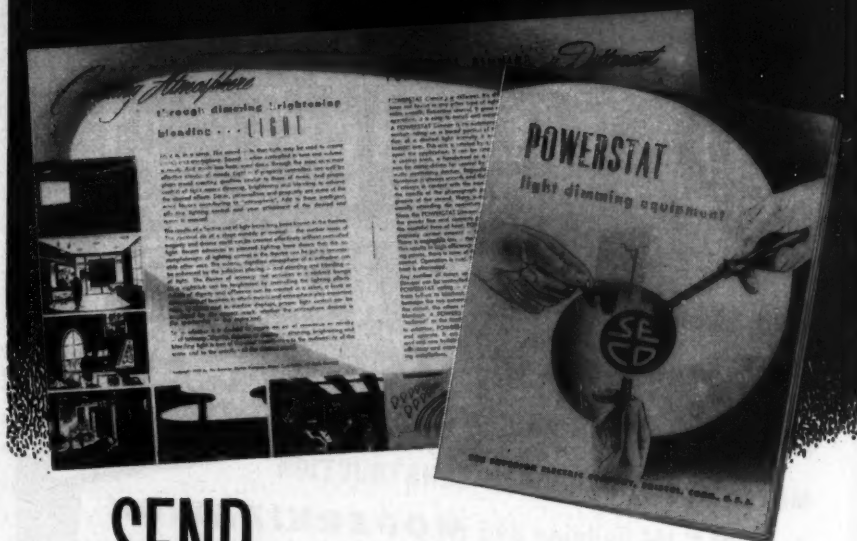
### Forces Get Building Funds

The extent of work immediately ahead for architects and contractors is shown to some degree by authorizations in the new Vinson measure (H. R. 9893). This was introduced December 11 and rushed through in record order for a bill of this magnitude.

A total of \$115.7 million is authorized for use by the Air Force for housing purposes. This was the largest such single allotment in the measure, the Navy getting \$20,184,250, and the Army \$15,258,900. The Air Force is on the threshold of an extensive expansion of its building program ("News From Washington"—ARCHITECTURAL RECORD, December 1950). Much of this ac-

(Continued on page 24)

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## THE RECORD REPORTS

WASHINGTON (Cont. from p. 23)

tivity will be in the purchase of troop housing. About 60 per cent of its personnel shelters will be erected at installations in the continental United States.

This does not mean the Wherry Act will be sidetracked. All three services will call on the Title VIII provisions increasingly to assist them in providing more troop shelter.

Budget meetings were in progress at Wright Field, Dayton, Ohio, to plan the

spending of appropriated funds for Air Force housing. The service was expected to begin almost immediately the purchase of prefabricated housing in quantity.

Substantial funds were provided for construction of family housing in overseas areas, particularly in Alaska. A sum of \$15,258,900 has been made available for additional barracks for the Army in the U. S.

The Navy's principal interest has been centering on Quonset huts for housing. But the Navy, like the Air Force, is experimenting with prefabricated construction, and may use wood barrack types extensively.

### Military Housing Lauded

Meanwhile, the National Association of Home Builders took a look at modern military housing and found it considerably improved, architecturally, in comparison with earlier efforts. Life for military families stationed at U. S. posts is looking up, N.A.H.B. said. The drab, barnlike barracks, and grim-looking rows of squat houses are on the way out.

Wherry Act construction is beginning to introduce military housing as colorful and modern as new model homes on the private market at some permanent bases. Families of enlisted men are to benefit first in the program. The new administrative procedures established under the Wherry Act some months ago permit faster accomplishments. Site selection and construction both are speeded up by the use of local architects to design the projects and the use of competitive bid procedures among sponsor-builders.

In the rush to erect new troop housing urgently needed some of these attentions to architectural treatment can be expected to fall by the wayside in the direct construction of military shelter. But it is encouraging to note that the planning of some military housing is getting detailed attention.

The four guiding principles that formed the Defense Department's basic strategy in requesting the supplemental appropriations and building its plans for the construction program immediately ahead were these:

1. Current strategic requirements will be satisfied to the extent required at this time.
2. Permanent facilities programmed will not exceed permanent requirements for the forces in being June 30, 1950.
3. The total of new permanent and existing temporary and permanent facilities at an installation will not exceed emergency requirements.
4. All existing mobilization-type facilities will be continued in use through the emergency and are not to be replaced with permanent construction.

These guides were outlined by Brig. Gen. W. L. Barriger, chief of the Army's service division.

(Continued on page 196)

## FACTS FOR ARCHITECTS

ABOUT "CONSTRUCTION BY ADHESION"

HERE ARE NEW METHODS  
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SAVINGS IN LABOR AND  
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either by Direct Adhesion or in conjunction with Surface Anchors. 4. Installing  
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1. Today it is normal procedure to install clay tile in hotel bathrooms without losing a night's revenue. This illustration shows one of the 144 rooms in the White Plaza Hotel, Dallas, Texas, in which MIRACLE ADHESIVE was used to do the job from the time the guest left his room in the morning until he returned that afternoon.



2. Plaster applied over wire and cork which has been attached to aluminum ducts using MIRACLE ADHESIVE and MIRACLE SPINDLE ANCHORS at John Hancock Mutual Life Insurance Co. Building, Boston, Mass. ARCHITECT, Cram and Ferguson. BUILDER, Turner Construction Co.



3. FIBERGLAS insulation, Type PF-613, 2" thick — bonded to concrete ceiling using MIRACLE PRONGED ANCHORS at Radio City Studio 6B, New York, N. Y. CONTRACTOR, William J. Scully, Inc., New York, N. Y.



4. WOOD RUNNERS installed on concrete floors with MIRACLE ADHESIVE and MIRACLE ANCHOR NAILS to support 2" solid partitions. Washington Circle Apartments, Washington, D.C. GENERAL CONTRACTOR, Charles H. Tompkins Company.

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\*The Greeks had a word for it—KUDOS, praise: tribute.



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## THE RECORD REPORTS

# CONSTRUCTION COST INDEXES

## Labor and Materials

United States average 1926-1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

### NEW YORK

### ATLANTA

Period	Residential		Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Steel		Residential		Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Steel	
	Brick	Frame		Brick and Concr.	Brick and Steel	Brick	Frame		Brick and Concr.	Brick and Steel
1925	121.5	122.8	111.4	113.3	110.3	86.4	85.0	88.6	92.5	83.4
1930	127.0	126.7	124.1	128.0	123.6	82.1	80.9	84.5	86.1	83.6
1935	93.8	91.3	104.7	108.5	105.5	72.3	67.9	84.0	87.1	85.1
1939	123.5	122.4	130.7	133.4	130.1	86.3	83.1	95.1	97.4	94.7
1940	126.3	125.1	132.2	135.1	131.4	91.0	89.0	96.9	98.5	97.5
1945	160.5	161.7	156.3	158.0	155.4	132.1	133.9	123.2	122.8	123.3
1946	181.8	182.4	177.2	179.0	174.8	148.1	149.2	136.8	136.4	135.1
1947	219.3	222.0	207.6	207.5	203.8	180.4	184.0	158.1	157.1	158.0
1948	250.1	251.6	239.4	242.2	235.6	199.2	202.5	178.8	178.8	178.8
1949	243.7	240.8	242.8	246.4	240.0	189.3	189.9	180.6	180.8	177.5
Sept. 1950	266.0	265.5	254.9	256.9	252.7	199.1	200.9	189.4	187.6	190.7
Oct. 1950	264.7	263.7	255.1	257.1	252.7	199.2	201.4	191.2	188.4	191.6
Nov. 1950	265.7	263.6	257.1	258.8	254.3	202.0	203.8	194.0	191.1	194.0
Nov. 1950	115.1	115.4	96.7	94.0	95.5	134.1	145.2	104.0	96.2	104.9

### ST. LOUIS

### SAN FRANCISCO

1925	118.6	118.4	116.3	118.1	114.4	91.0	86.5	99.5	102.1	98.0
1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.4	104.9	100.4
1935	95.1	90.1	104.1	108.3	105.4	89.5	84.5	96.4	103.7	99.7
1939	110.2	107.0	118.7	119.8	119.0	105.6	99.3	117.4	121.9	116.5
1940	112.6	110.1	119.3	120.3	119.4	106.4	101.2	116.3	120.1	115.5
1945	152.8	152.3	146.2	148.5	145.6	146.2	144.3	144.5	146.8	147.9
1946	167.1	167.4	159.1	161.1	158.1	159.7	157.5	157.9	159.3	160.0
1947	202.4	203.8	183.9	184.2	184.0	193.1	191.6	183.7	186.8	186.9
1948	227.9	231.2	207.7	210.0	208.1	218.9	216.6	208.3	214.7	211.1
1949	221.4	220.7	212.8	215.7	213.6	213.0	207.1	214.0	219.8	216.1
Sept. 1950	240.2	238.8	225.5	229.0	226.4	236.2	234.1	225.6	226.2	225.6
Oct. 1950	238.7	236.7	225.9	229.4	226.5	235.2	232.7	225.8	226.4	225.6
Nov. 1950	240.3	236.6	228.0	231.5	228.5	233.6	230.3	227.0	228.0	227.3
Nov. 1950	118.1	121.1	92.1	93.2	92.0	121.2	131.9	93.4	87.0	95.1

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926-29 for that particular type — considered 100.

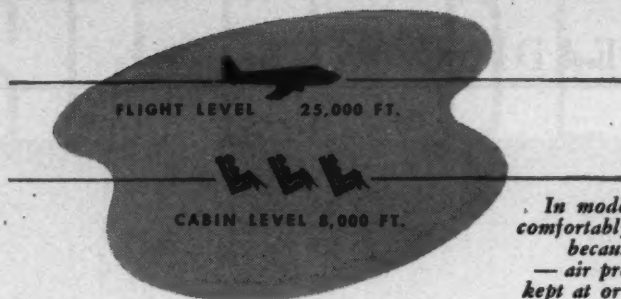
Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110  
index for city B = 95  
(both indexes must be for the same type of construction).  
Then: costs in A are approximately 16 per cent higher than in B.  
$$\frac{110-95}{95} = 0.158$$
  
Conversely: costs in B are approximately 14 per cent lower than in A.  
$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926-29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear regularly on this page.



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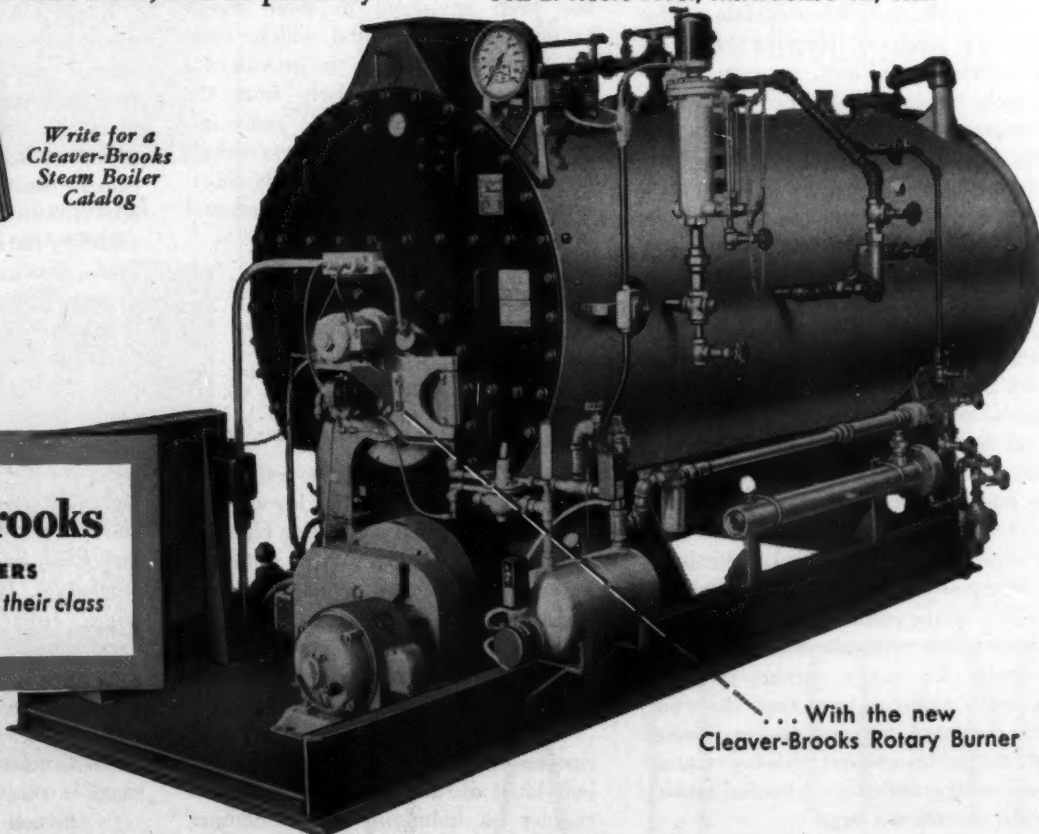


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## REQUIRED READING



### MUSEUM PLANNING

*Museum Buildings: A Planning Study.* By Laurence Vail Coleman. The American Association of Museums (Smithsonian Institution, Washington 25, D. C.), 1950. vii + 298 pp., illus. \$10.00.

REVIEWED BY CHARLES H. SAWYER  
Director, Division of the Arts,  
Yale University

This book, the author explains, is for museum planners, whether they are architects, consultants, museum professionals, trustees, building committees or prospective benefactors. Filling a serious vacuum thoroughly and well, it becomes immediately the indispensable reference book for anyone faced with the problem of planning a museum of any type. As Director of the American Association of Museums for the past twenty-five years, Mr. Coleman knows the museums of the country at first hand and is uniquely qualified to assess the mistakes of the past and suggest direction for their future development. His discussion of both the functional and technical aspects of museum planning leaves little to be desired. This reviewer wishes that the author had, in his introductory section, placed more stress explicitly on the potentialities of a museum as an active cultural center in its community, for many serious errors in museum planning have been the result of a continual misconception on the part of both architects and building committees as to a museum's potential mission as an educational force.

Mr. Coleman shares with most museum professionals today a preference for contemporary rather than traditional or formal design. He discusses at length and discards such traditional museum practices as monumental entrances and staircases, rigid interior spaces, top skylights and high ceilings for art galleries. He makes it very apparent, however, that the "New Look" is of itself no guarantee of better museum planning unless it is accompanied by an imaginative understanding of the present and future activities that are to go on within the museum walls. The following passage is both a warning and a challenge to the museum architect of today:

"Flexibility of the kind that allows for functional growth — that is, expansion of the various categories of space without violence to either the appearance of the building or its usefulness — has been envisaged in some recent buildings, neglected and widely cried about in others. Unless the growth of a building is planned wisely from the start, additions have to be sadly improvised. Shortness of funds may dictate an incomplete building, but only shortness of sight can give a hidebound project."

### PLANT LAYOUT AND OPERATION

*Plant Layout and Materials Handling.* By James M. Apple. The Ronald Press Co. (15 East 26th St., New York 10, N. Y.), 1950. 5¼ by 8½ in. xiv + 367 pp., illus. \$5.00.

This volume deals with the problem of coordination between plant layout, materials handling and production planning and control. Although written primarily for persons in the plant management and operation field, it contains much material of value to architects who have industrial plants, large or small, on their boards.

The chapter on plant location discusses community aspects as well as the individual site and there is an extended chapter on industrial plant buildings

that discusses the relationship between operations layout and building, one-story vs. multi-story buildings, etc. In addition there is an appendix entitled "Building Construction and Service Facilities," which contains much data all the way from wash fountains and shower capacities through illumination standards and safe loads on concrete floor slabs.

Certainly a plant manager reading these portions of the book would receive an introduction to the building design aspects and it probably behooves architects in the industrial field to be familiar with the extent of information available in such a book.

### MODERN FURNITURE

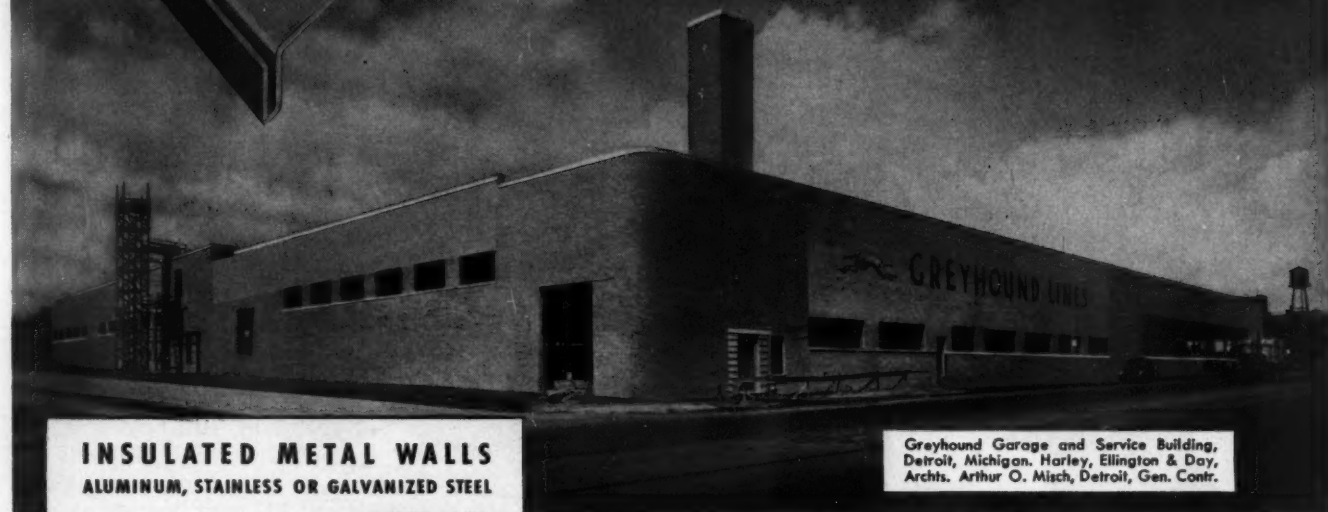
*Knoll. Knoll Associates, Inc. and H. G. Knoll International (575 Madison Ave., New York 22, N. Y.), 1950. 8½ by 12 in. 82 pp., illus. \$3.50.*

Knoll Associates have not only produced a catalog of the furniture, lamps, fabrics and design services they sell; they have made available in photographs of chests, chairs, beds, desks, etc., in actual settings and from many differing camera positions, a vocabulary of modern furnishings which is made even more useful by the inclusion of accurate measured drawings. Architects will undoubtedly find the book helpful; students will probably use it as a bible. It is well organized and expensively printed; Herbert Matter deserves applause for its design.

The subject matter includes the designs one has come to expect: Mies Van Der Rohe's Barcelona chair, the Hardoy canvas and wrought iron construction, and Elias Svedberg's wing chair for a troglodyte. It also includes, on facing pages, Joseph Frank's bentwood and cane upholstered reminder of the early soda parlor, and Nakashima's sincere, understanding, and really beautiful refinement of the Windsor chair. In sections on other types of furnishings, the range is comparable.

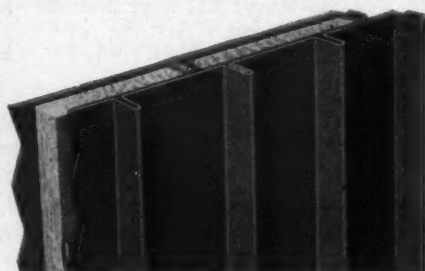
(Reviews continued on page 31)

# STEEL DECK

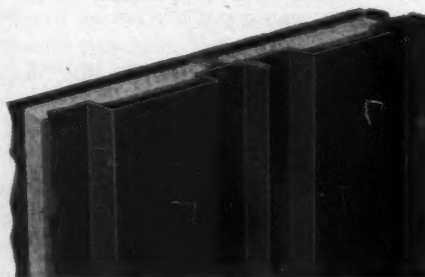


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## REQUIRED READING

(Reviews continued from page 28)

### NEW EDITIONS

#### CIVIL ENGINEERING

*Civil Engineering Handbook*. Third ed. Ed. by Leonard C. Urquhart. McGraw-Hill Book Co. (330 West 42nd St., New York 18, N. Y.), 1950. 6 by 9 in. x 1002 pp., illus. \$8.50.

This is an enlarged edition of the standard reference designed to meet the needs of civil engineers in solving specific problems, especially those outside their own fields. Aspects of civil engineering are covered under the following headings: surveying; railway, highway and airport engineering; mechanics of materials; hydraulics; stresses in framed structures; steel design; cement and concrete; foundations; sewerage and sewage disposal; water supply and purification.

#### THE ENGLISH SCENE

*The English Panorama*. By Thomas Sharp. The Architectural Press (13, Queen Anne's Gate, London, S.W. 1.) Second ed., 1950. 5½ by 8½ in. 152 pp., illus. 12d 6s.

This is a new edition of the volume which was first published in 1936 and has been out of print for ten years. It is a careful study of English landscape and townscape and the interaction of the growth of towns on countryside and vice versa.

Mr. Sharp describes the early and medieval times, the renaissance, the 19th century (with its appalling results in terms of towns) and the present. But he does not stop here. Nor is he entirely dejected. Although in his concluding chapter, "Tomorrow," he sums up—"It has been a melancholy story"—he does not think it all a bitter one. He offers up to intelligence and reason the chance for redemption—that land receive better treatment in the hands of those who are concerned one way or another, with better living.

### BOOKS RECEIVED

*It's Only Temporary*. By Charles Mergendahl. Doubleday & Co., New York—Life in the modern housing development, Camptown (a novel).

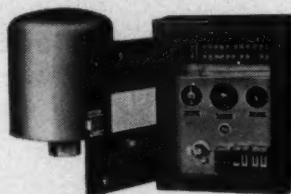
(Continued on page 32)

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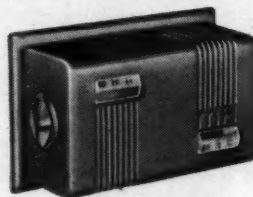
Just check space opposite equipment you're interested in, fill in your name and address and mail this column to us. We'll get your facts to you promptly.



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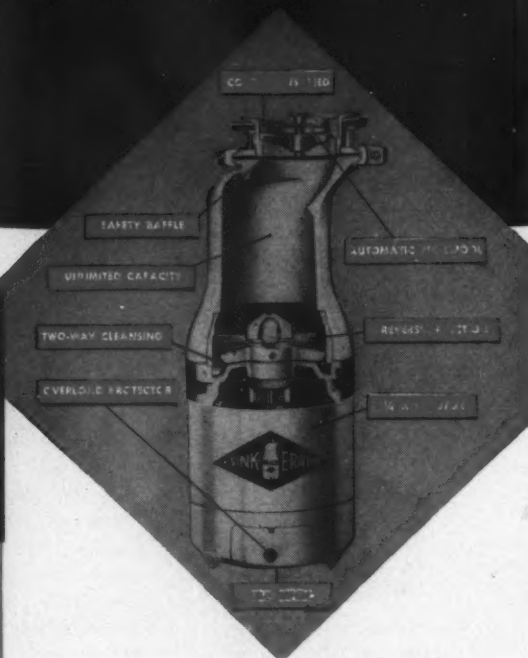
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## REQUIRED READING

(Continued from page 31)

*Parliament House.* By Maurice Hastings. Architectural Press, London—History of the chambers of the House of Commons.

*Mexico in Sculpture.* By Elizabeth Wilder Weismann. Harvard University Press, Cambridge—Primarily a picture book, with special consideration of Mexican art in relation to Mexico's cultural picture.

*A Critical Review of Le Corbusier.* By P. M. Bardi. Museu de Arte de São Paulo, Brazil—In conjunction with the inauguration of the museum's exhibition room with a show of Le Corbusier's work.

*Exhibition Design.* Edited by Misha Black. The Architectural Press, London—Gives design standards and qualities essential for a good exhibition, and includes techniques, construction, administration, etc.

*The New School.* By Alfred Roth. Girsberger, Zurich—Presents classroom units and includes problems pertinent to building contemporary schools "placed in their full context of education, life, and the creative powers..." (in English, French and German).

*Fundamentals of Acoustics.* By Lawrence E. Kinsler and Austin R. Frey. John Wiley & Sons, New York—Analysis of the principles of generation, transmission and reception of acoustic waves, and applications of acoustics.

*Snow Melting.* By T. Napier Adlam. The Industrial Press, New York—Comprehensive manual on use of embedded hot water coils for roads, driveways, sidewalks.

*Building Materials.* By Cecil C. Handisyde. The Architectural Press, London—Up-to-date information given in a form useful to both practising architects and architectural students.

*Materials of Construction.* By John H. Bateman. Pitman Publishing Corp., New York—A textbook for undergraduates of civil and architectural engineering.

*A Guide to Designing Windows.* By Neville Woodbury. Neville Woodbury Ltd., London—A digest discussing the essentials of fenestration.



WINDOWALLS of Andersen Casement and Picture Window Units

# ANDERSEN Windowalls\* COMPLETE WOOD WINDOW UNITS

**WARMING SUNSHINE ENTERS:** freezing winds stay *outside*. It's an easy trick for these expansive WINDOWALLS, which serve simultaneously both as windows and as wall for most of this fine home's southern exposure.

Much of the beauty, much of the famed efficiency of these Andersen Casement and Picture Window Units comes from their careful wood construction. Wood blends with the shingle ex-

terior, and wood's insulating values improve the windows' performance.

See Detail Catalog in Sweet's Architectural and Builders' Files, or write us for further information. The complete WINDOWALLS Tracing Detail File will be sent on request to architects and designers at no charge. Andersen WINDOWALLS are sold by lumber and millwork dealers.

\*TRADEMARK OF ANDERSEN CORPORATION

*Andersen Corporation*  
BAYPORT • MINNESOTA





**A design study for The Mosaic Tile Company to illustrate  
uses for ceramic tile in a contemporary house**

by Serge P. Petroff A. I. A. and Harvey P. Clarkson A. I. A.  
132 E. 58TH STREET, NEW YORK 22, N. Y.

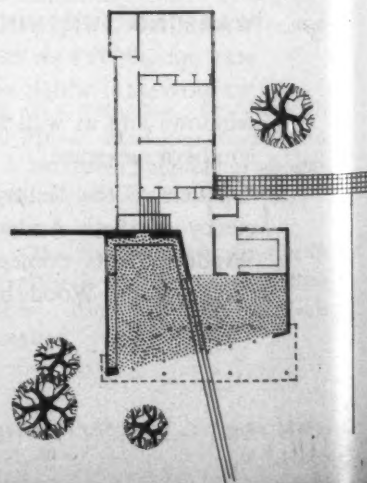
In the architects' search for materials which help to express the practical utility of functional design, Mosaic Ceramic Tile is finding wider and wider acceptance.

In this living-dining room study, the architects clearly illustrate how Mosaic Ceramic Tile may be used in several ways to provide an unusual combination of lasting utility and beauty—a warm and attractive background for pleasant, carefree living.

Several types of Mosaic Ceramic Tile are used in the study. Mosaic Granitex for the

floor over a concrete slab in which heating pipes are placed; Mosaic Glazed Wall Tile for decorative surface on two walls; Mosaic Carlyle Quarry Tile in the construction of the fireplace, as the surface for a unique bench served by movable seats and as steps to reach the dining area on an upper level.

The complete Petroff-Clarkson Study is available at no cost. Three folders describe the study, provide tile specifications and radiant heating computations. Use the coupon on the opposite page.



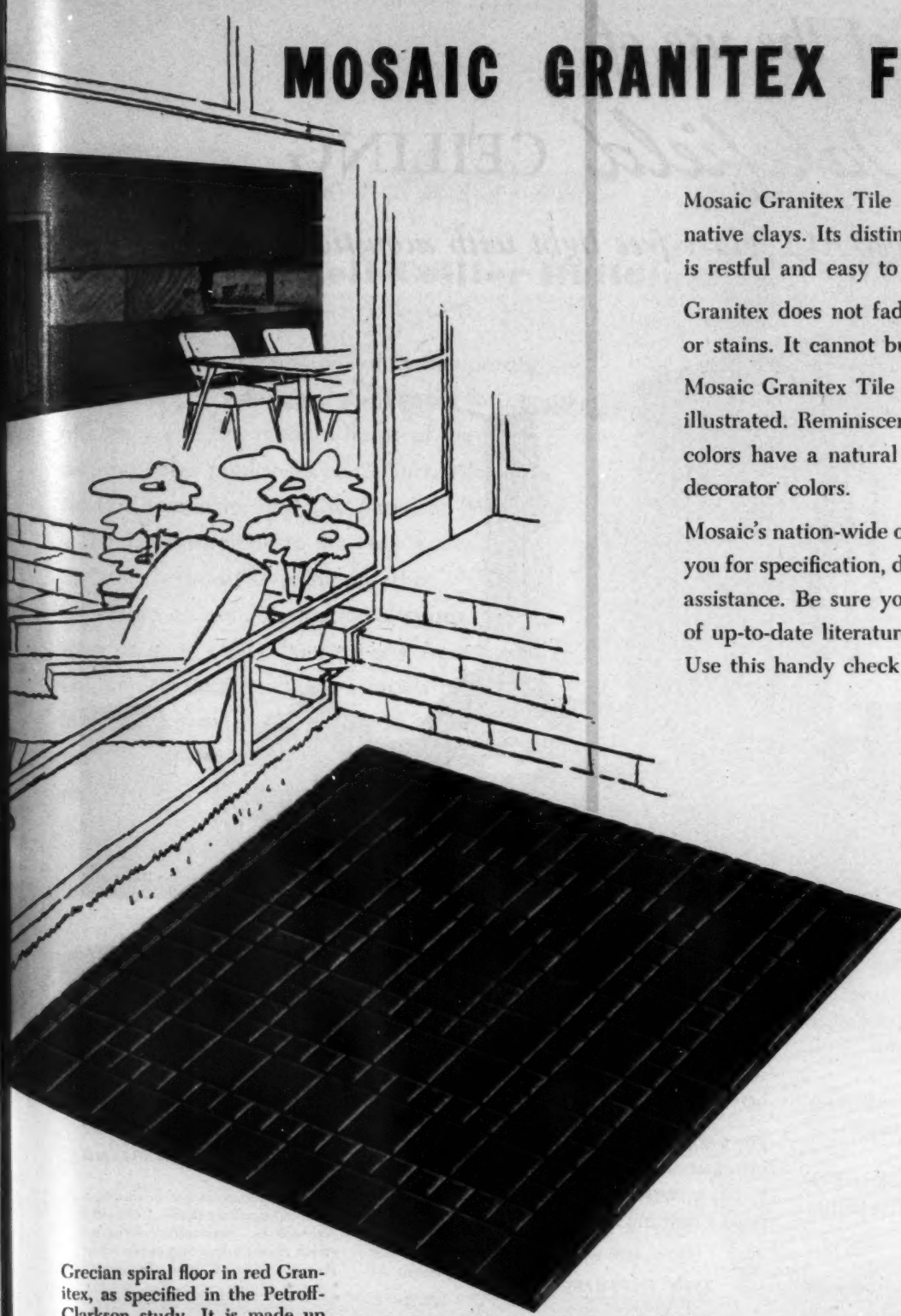
Grecian sp  
itex, as sp  
Clarkson s  
of units 1  
Pattern No

**THE**



GENERAL C  
IN PRINCIPAL

# MOSAIC GRANITEX FLOOR TILE



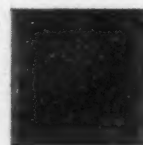
Grecian spiral floor in red Granitex, as specified in the Petroff-Clarkson study. It is made up of units 1" x 1" and 2" x 2". Pattern No. 2251A.

Mosaic Granitex Tile is made from a blend of native clays. Its distinctive, pleasing texture is restful and easy to live with.

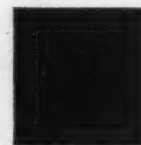
Granitex does not fade. It is not affected by acid or stains. It cannot burn, warp or curl.

Mosaic Granitex Tile is made in eight colors, as illustrated. Reminiscent of rich earth tones, Granitex colors have a natural charm to harmonize with decorator colors.

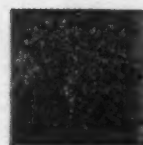
Mosaic's nation-wide organization is available to you for specification, design and installation assistance. Be sure your files contain every piece of up-to-date literature now available on Mosaic Tile. Use this handy check list to be sure.



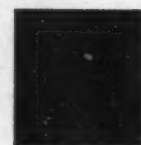
Tan Granitex No. 1221



Brown Granitex No. 1222



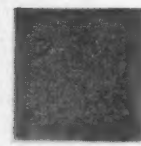
Buff Granitex No. 1223



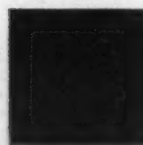
Red Granitex No. 1225



Black Granitex No. 1228



Yellow Granitex No. 1231



Blue-Gray Granitex No. 1226



Blue-Green Granitex No. 1227

**THE MOSAIC TILE COMPANY**

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☐ Petroff-Clarkson Study

☐ Quarry Tile Booklet

☐ Trim Chart

☐ Ceramic Floor Tile Booklet

☐ Tile Bath Accessories Folder



# An example of the use of THE *Wakefield* CEILING

*integrating Over-ALL glare-free light with acoustical control*

Executive Office  
C. F. DENZER CO.  
Sandusky, Ohio

Installed by  
FRANK TRAUT  
ELECTRIC COMPANY  
Sandusky, Ohio



A study of this recent installation shows the very definite advantages of the Wakefield Luminous-Acoustical Ceiling for offices, drafting rooms, classrooms and other areas devoted to critical visual tasks.

1. Evenly distributed, glare-free light with exceptionally low brightness contrasts.
2. Architecturally discreet concealment of pipes and ducts with ready accessibility to them.
3. Efficient sound control integrated with the light source (acoustical baffles suspended below luminous ceiling).
4. A complete package, shipped direct to the job, and installed completely by an electrical contractor.

An Illumination Survey by a registered professional electrical engineer shows brightness ratios well below those of I.E.S. Recommended Practice of Office Lighting. For example: from 1.4 to 1 to 1.1 to 1 between task and wall; 2.2 to 1 maximum between luminous ceiling and wall.

For a copy of this survey, and for complete information on all phases of the Wakefield Ceiling, write to The F. W. Wakefield Brass Company, Vermilion, Ohio.

## HOW DISTRIBUTED

*The Wakefield Ceiling will be distributed through licensed agents and installed by factory-trained licensed installers. Planning will be done through electrical engineers and architects. Drawings submitted to Wakefield will be interpreted by job engineers into drawings, bills of material and quotations.*

## BRIEF DESCRIPTION OF THE WAKEFIELD CEILING

Fluorescent sources are suspended from structural members above. Diffusion is provided by translucent corrugated acrylic plastic sheets. Suspended below these sheets, at 36" intervals, are perforated acoustical baffles, wedge-shaped in cross section and filled with sound absorbing material.

A simple baffle rail or fusion strip and hanger constitute "the method" of installation, which involves the fewest possible supports and brings economy of structural and electrical material as well as of labor. Acoustical baffles are optional.

THE F. W. WAKEFIELD BRASS COMPANY, VERMILION, OHIO



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### **..in the Crowell-Collier Building**

Styled in the best traditions of contemporary architecture . . . designed throughout for utmost efficiency . . . this modern home of the world-known publishers of *Colliers*, *Woman's Home Companion*, and *The American Magazine* is the latest addition to the New York skyline . . . and like so many other important air conditioned installations from coast to coast, Tri-Flex and Aerovane Grilles and Registers were selected to insure maximum, flexible control of air delivery . . . to meet the most exacting requirements of performance.

**Tri-Flex FOR SUPPLY**

**Aerovane FOR RETURN**

For quick selection . . . economy . . . prompt delivery . . . specify and install Tri-Flex and Aerovane Grilles and Registers. For complete details and engineering data, write for Catalog 485.

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NEW BRITAIN, CONNECTICUT





## How to Specify Armstrong's Rubber Tile for Grade-Level Subfloors

Now architects can specify Armstrong's Rubber Tile for grade-level installation. This is made possible by an adhesive known as Armstrong's No. S-104 Chemical-Set Cement developed originally for cementing linoleum to metal and other non-porous suspended subfloors. Until the development of this adhesive, rubber tile installations were not recommended over grade-level concrete because the alkaline moisture in such subfloors attacked and destroyed the bonding qualities of standard adhesives for rubber tile.

Armstrong's No. S-104 Chemical-Set Cement resists the harmful action of alkaline moisture in grade-level concrete floors. In order to obtain a satisfactory bond, it is extremely important that the subfloor meet certain conditions. It must be clean, free of all oil, grease, and other foreign substances. No. S-104 Chemical-Set Cement will not bond satisfactorily to areas upon which paint, varnish, or flooring adhesives have been applied.

Armstrong's No. S-104 Chemical-Set Cement is a two-part adhesive—mixed on the job. It is trowelled on the subfloor in the same manner as standard resilient flooring adhesives. It covers approximately 100 square feet to the gallon. Armstrong's No. S-104 Chemical-Set Cement is also used to bond metal edging to concrete and metal stairs.

Present restrictions on certain raw materials used in its manufacture limit the production of Armstrong's No. S-104 Chemical-Set Cement. It is advisable to contact your Armstrong flooring contractor as to availability in your locality before specifying. For complete architects' specifications and other information on the installation of Armstrong's Rubber Tile over grade-level subfloors with Armstrong's No. S-104 Chemical-Set Cement, architects are invited to contact their nearest Armstrong District Office or write directly to the Armstrong Cork Company, Floor Division, 2402 State Street, Lancaster, Pennsylvania.

## ARMSTRONG'S RESILIENT FLOORS

LINOLEUM • LINOTILE® • ASPHALT TILE



RUBBER TILE • CORK TILE • LINOLEUM TILE

In Electric Exhaust Ventilators **THIS ISN'T ALL** ➔

**...The Blade's the thing!**

**Blo-Fan**\*

HAS THIS BLADE EXCLUSIVELY!



### Efficiency

The patented Blo-Fan blade combines the volume of a breeze fan with the power of a blower to move air quickly, quietly and efficiently. No other electric exhaust ventilator has this blade!



### Adjustability

Only Blo-Fan Model 210 has this NINE-position control switch that makes it as easy to control the rate of ventilation as it is to regulate the thermostat on a kitchen range.



### Adaptability

Blo-Fan installs over the point of air pollution—in the ceiling or any wall inside or outside! Requires only 3 1/2 inches behind plaster; uses standard 3 1/4" x 10" furnace duct.



### Simplicity

Blo-Fan is easier to clean—no tools are ever required—NOT EVEN A SCREW DRIVER. All you do is unscrew the large center cap and remove the grille and motor assembly.



### Experience

For over 25 years Pryne and Company has made home owners happy by manufacturing superior electric ventilators especially designed for home use in the kitchen, bath, game room and laundry.

**Blo-Fan** AMERICA'S MOST IMITATED HOME VENTILATOR  
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**PRYNE & CO., INC.** BOX R-251 POMONA, CALIF.  
Eastern Factory: Newark, New Jersey  
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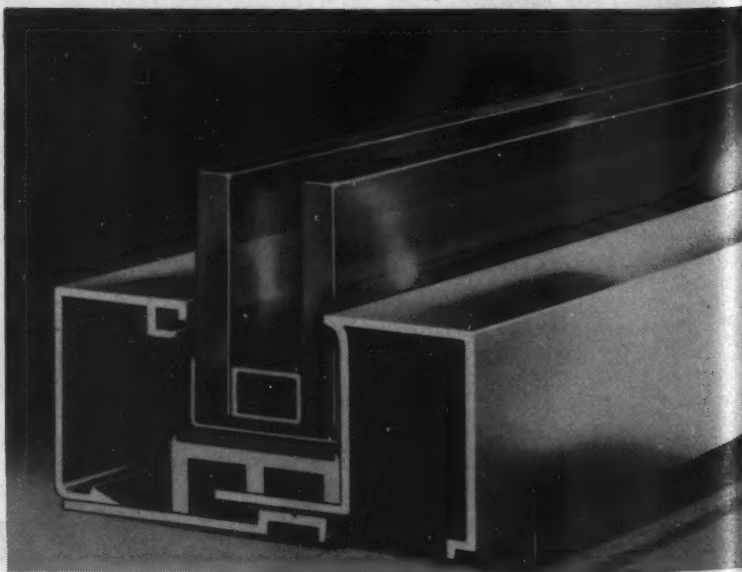


# Everything

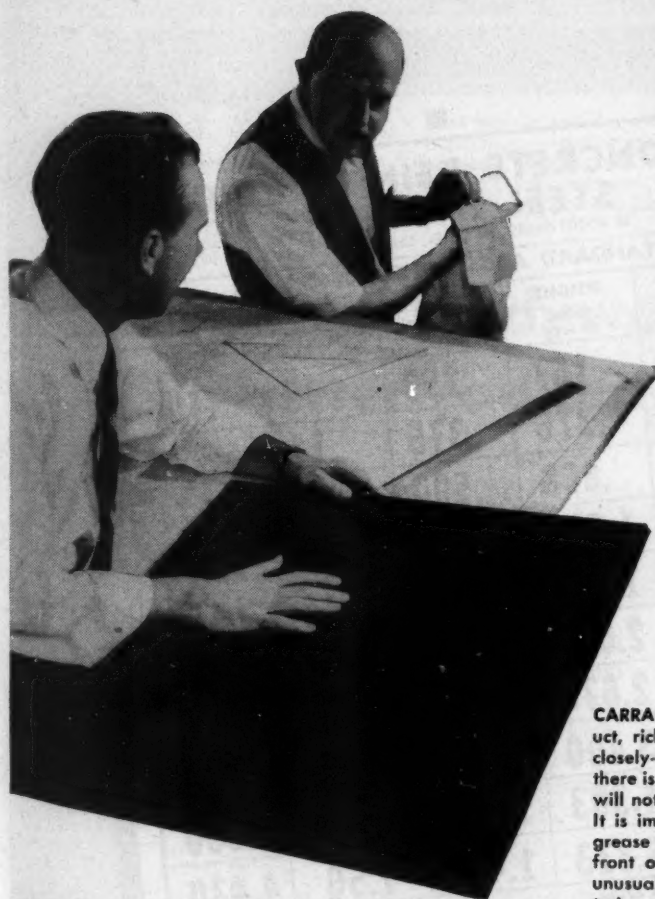


**PASSERS-BY** stop, look and enter when they see an open-vision front like this women's wear store at Medford, Massachusetts. Here Pittsburgh Polished Plate Glass, Herculite Doors and Pittco Store Front Metal have been enlisted to help create the kind of front that modern retailers want to spur the movement of their merchandise. Pittsburgh has a complete line of quality products to assist in achieving distinctive, attention-compelling, sales-winning store fronts. Architects: Herman L. Feer and William E. Nast, Boston, Mass.

**PITTCO De Luxe Store Front Metal** includes a complete line of bars and sashes for use with Twindow—Pittsburgh's window with built-in insulation. These members are extruded and assure rugged strength, clear, sharp profiles and a smooth finish, rich in tone and gloss. They can be used with all Pittco De Luxe standard frame mouldings, thus offering latitude of design for top quality store front installations requiring insulated windows. The most commonly used of the Pittco members for Twindow installations—two sashes and a division bar—are themselves insulated, thus reducing heat loss through them.



for the modern store  
under one reliable name



FACTORY-ASSEMBLED, completely "packaged" Pittsburgh Doorways are precision-fabricated to cut costs on the job. No time-consuming calculations, laborious assembly work or irksome details of setting and fitting are involved. The handsome, extra-heavy extruded aluminum frame, reinforced with steel, is simply bolted into the building opening. Then the Herculite Doors, for whose rugged strength the frame has been especially engineered, are hung and the installation is complete. Inset shows the Pittco Checking Floor Hinge—a compact unit, only  $6\frac{1}{4}" \times 6\frac{1}{4}"$ , and a marvel of modern engineering. This hinge is permanently located in its own reinforced box in all Pittsburgh Doorways. It has positive door-speed control, separate checking control, built-in hold-open feature. It is sealed in oil for life.



CARRARA Structural Glass is a finely-machined product, rich, flawless and brilliant of surface. It has a closely-knit structure. Its joints are true and even, so there is no lippage. And there is no warpage. Carrara will not check, craze, fade, stain or discolor with age. It is impervious to weather, water, acids, chemicals, grease and pencil marks. It is equally suitable for a front of classic simplicity or for one marked by an unusual design. It is ideal also for decorating interiors and for the walls, stiles and partitions of wash-rooms and lavatories. Carrara Glass is available in ten attractive colors and in a wide range of thicknesses.

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Your Sweet's Catalog File contains a complete listing and descriptions of Pittsburgh Plate Glass Company products.

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PITTSBURGH PLATE GLASS COMPANY





Here's Complete Information on the

## New NUMBERING SYSTEM

FOR A305 REINFORCING BARS

A new method of identifying reinforcing bars for size has recently been adopted by the steel industry. In this new system, bars are designated by numbers from 2 to 11. However, the new bars will have the same cross-sectional area as the old bars, so design tables, etc., will not need to be changed. The bar chart below explains the new designations.

### NEW BAR NUMBERS

These denote the nominal diameter of the bar in eighths of an inch. Thus, a #3 bar (nominal diameter  $\frac{3}{8}$ " ) has the same weight per foot as a  $\frac{3}{8}$ " plain round bar. Bars #9, 10, and 11 are an exception to this rule. See details below.

### NO MORE SQUARE BARS

Bars #9, 10, and 11 are round bars equivalent in weight and nominal cross-sectional area to the former 1",  $1\frac{1}{8}$ ", and  $1\frac{1}{4}$ " square bars.

### CONCRETE REINFORCING STEEL INSTITUTE

38 SOUTH DEARBORN STREET, CHICAGO 3, ILLINOIS

#### STANDARD A305 REINFORCING BARS

BAR SIZES		WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS — ROUND SECTIONS		
OLD (INCHES)	NEW (NUMBERS)		DIAMETER INCHES	CROSS SECTIONAL AREA - SQ. INCHES	PERIMETER INCHES
$\frac{1}{4}$	2	.167	.250	.05	.786
$\frac{3}{8}$	3	.376	.375	.11	1.178
$\frac{1}{2}$	4	.668	.500	.20	1.571
$\frac{5}{8}$	5	1.043	.625	.31	1.963
$\frac{3}{4}$	6	1.502	.750	.44	2.356
$\frac{7}{8}$	7	2.044	.875	.60	2.749
1	8	2.670	1.000	.79	3.142
1	9	3.400	1.128	1.00	3.544
$1\frac{1}{8}$	10	4.303	1.270	1.27	3.990
$1\frac{1}{4}$	11	5.313	1.410	1.56	4.430

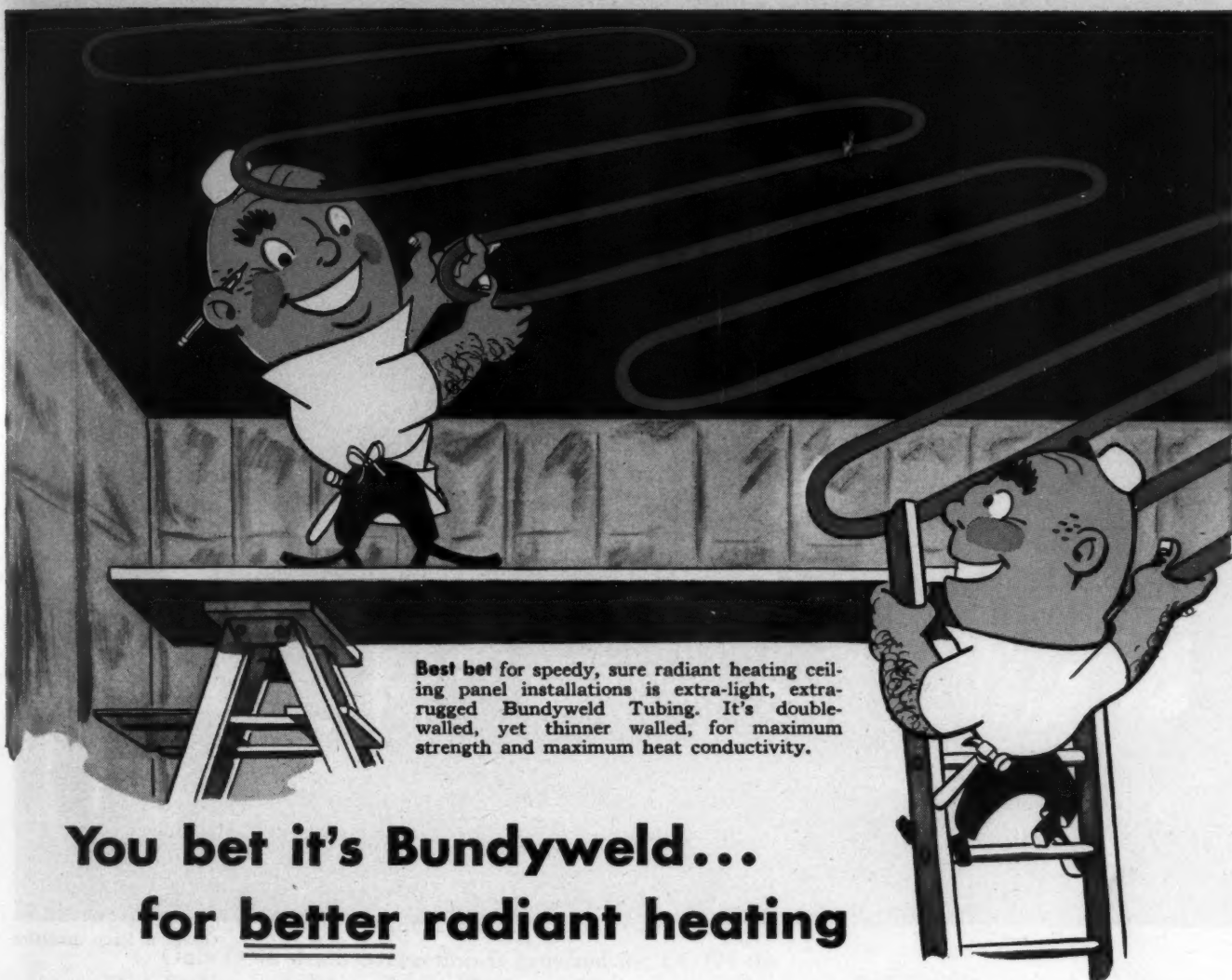
The new bar numbers are based on the number of 1/8 inches in the nominal diameter of the bar.  
Bar number 2 is plain rounds only. Bars numbered 9, 10 and 11 are round bars and equivalent in weight and nominal cross-sectional area to the old type 1",  $1\frac{1}{8}$ " and  $1\frac{1}{4}$ " square bars.



The above weights are adopted as standards by the Institute in 1934 and supersede former practice. These weights have been approved through the U.S. Department of Commerce Simplified Practice Recommendation R 26-52.

Write for Your FREE Copy  
of this New Bar Card

CONCRETE REINFORCING STEEL INSTITUTE • 38 S. Dearborn St., Chicago 3



Best bet for speedy, sure radiant heating ceiling panel installations is extra-light, extra-rugged Bundyweld Tubing. It's double-walled, yet thinner walled, for maximum strength and maximum heat conductivity.

## You bet it's Bundyweld... for better radiant heating

Your best bet for better radiant heating panel installations is amazing Bundyweld Tubing.

And here's why—no other tubing can match all the advantages Bundyweld offers, for no other tubing is made like Bundyweld!

It's double-walled from a single strip, a patented construction that gives it the sturdiness to withstand the jars and jolts on the job. It's thinner walled, too, for maximum heat conductivity. It's lightweight, ductile, easy to shape and a cinch to solder or braze. Right from its arrival on the building site, you get major

savings in labor and costs all down the line with dependable Bundyweld.

### There's more, too

With a coefficient of thermal expansion very close to that of average plaster mix, Bundyweld can be installed without plaster worries. Painting offers no headaches, either, when normal precautions are exercised in installation.

Check on Bundyweld Tubing now... your best bet for better radiant heating installations.\* Write: Bundy Tubing Company, Detroit 14, Michigan.

# Bundyweld Tubing

DOUBLE-WALLED FROM A SINGLE STRIP

### WHY BUNDYWELD IS BETTER TUBING



SIZES UP TO  $\frac{5}{8}$ " O.D.



Bundyweld starts as a single strip of basic metal, coated with a bonding metal. Then it's...



continuously rolled twice around laterally into a tube of uniform thickness, and



passed through a furnace. Bonding metal fuses with basic metal, presto—



Bundyweld... double-walled and brazed through 360° of wall contact.





GEORGE R. PAUL, *Architect*

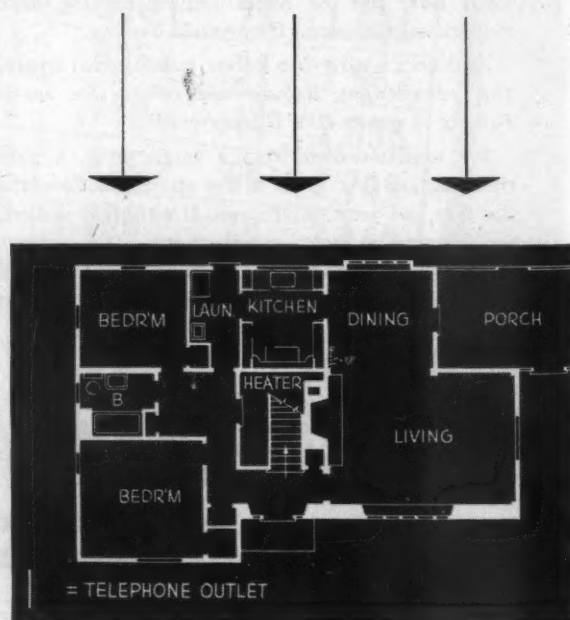
## Plan a "disappearing act" for telephone wires

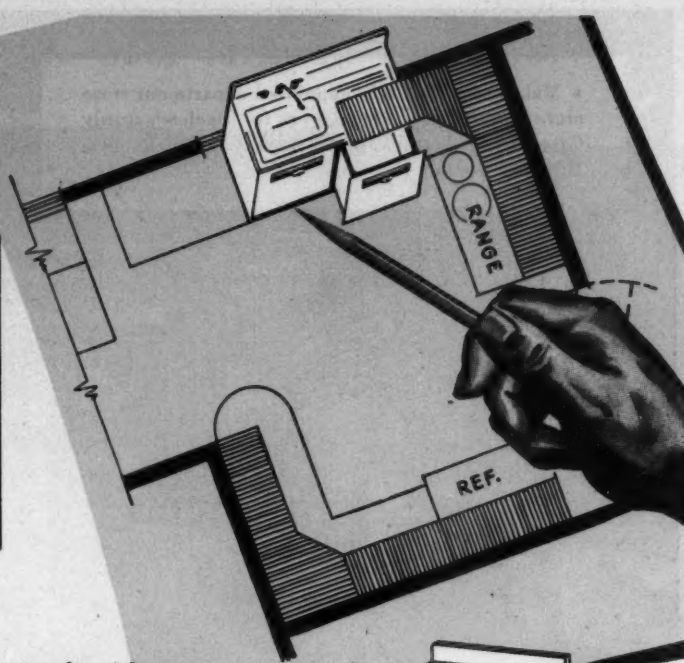
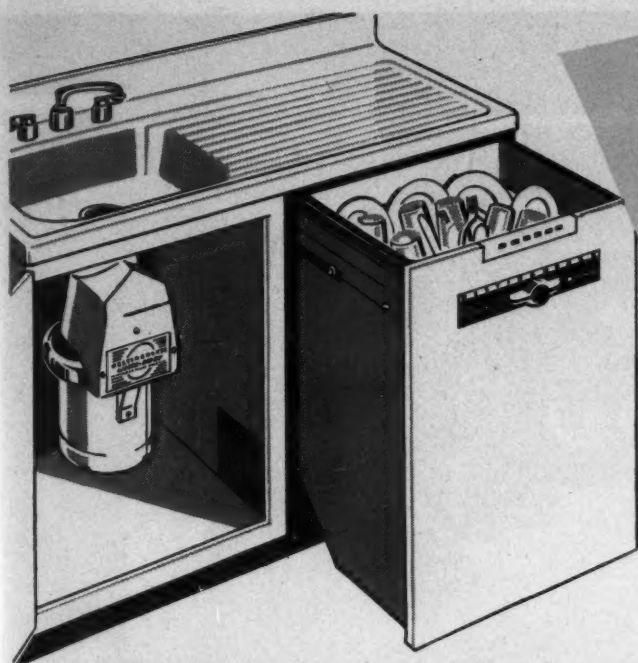
Hidden telephone wiring helps protect the beauty of carefully planned interiors. It helps, too, in selling quality-conscious prospects. For telephone raceways are a sign of thorough planning and thoughtful construction.

It's easy and inexpensive to build in telephone raceways. First, select convenient locations for telephone outlets. Then, during construction, have a few lengths of rigid or flexible conduit placed inside the walls and connected to the outlets. These provide "hidden passages" for wires when telephones are installed later on.

Your Bell Telephone Company will be glad to help you. Just call the local Business Office for assistance in planning telephone service in the homes you build.

**BELL TELEPHONE SYSTEM**





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### Westinghouse Dishwasher Waste-Away® Combination Offers New Opportunities For Better Kitchen Plans

Here's a 48" electric sink that should make a hit with every architect and builder for these very practical reasons:

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3. For custom work surface kitchens, the under-counter model dishwasher and the matching sink cabinet permit use of any type counter and drainboard material, without breaks. Waste-Away fits standard sink bowls, connections are unchanged.

This Westinghouse combination has been HOME-PROVED in all types of installations. It is truly the last word in serviceability. Investigate its possibilities now. Tear out the attached coupon and mail today for complete information.

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ELECTRIC APPLIANCE DIVISION • MANSFIELD, OHIO

Both Electric Sink and 24" Cabinet Model use Under-Counter Dishwasher as a basic unit. Note removable top and side panels.

Westinghouse Electric Corporation  
Appliance Division  
Mansfield, Ohio

Gentlemen:

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WASTE-AWAY



• Making a beautifully appointed department store more beautiful is everyday work for Bigelow's sturdy Gropoint Cushionlok. Installation is at Battelstein's, Houston, Texas.



Why Battelstein's comes back for more

## BIGELOW GROPOINT CUSHIONLOK



WHEN WE INTRODUCED our Cushionlok weave, we did a lot of explaining about it. *Had to*...it was so different from any carpet previously made.

Its cushiony built-in rubber back... its ease of laying, even on a plain cement floor...its almost incredible ruggedness...was revolutionary.

Now, having used it, our customers are telling us about it!

Here's what Harry Battelstein, Vice-president of Battelstein's, Inc. of Houston, Texas has to say...

"After having screened all leading commercial carpets we selected Bigelow's Gropoint Cushionlok. The

performance of this fabric from the standpoint of uniform beauty, luxury, and comfort, plus all-around economy, is most exemplary.

"In planning the new Battelstein's suburban store, Bigelow carpet is our selection. It is the right carpet and we are pleased with every step we take on this unique and time-tested loop-pile fabric."

*Bigelow's Carpet Counsel* will help you, like Mr. Battelstein, find the right carpet for your store. They'll gladly advise on weave, color, pattern, and price. Why not profit by the experience of this board of experts?

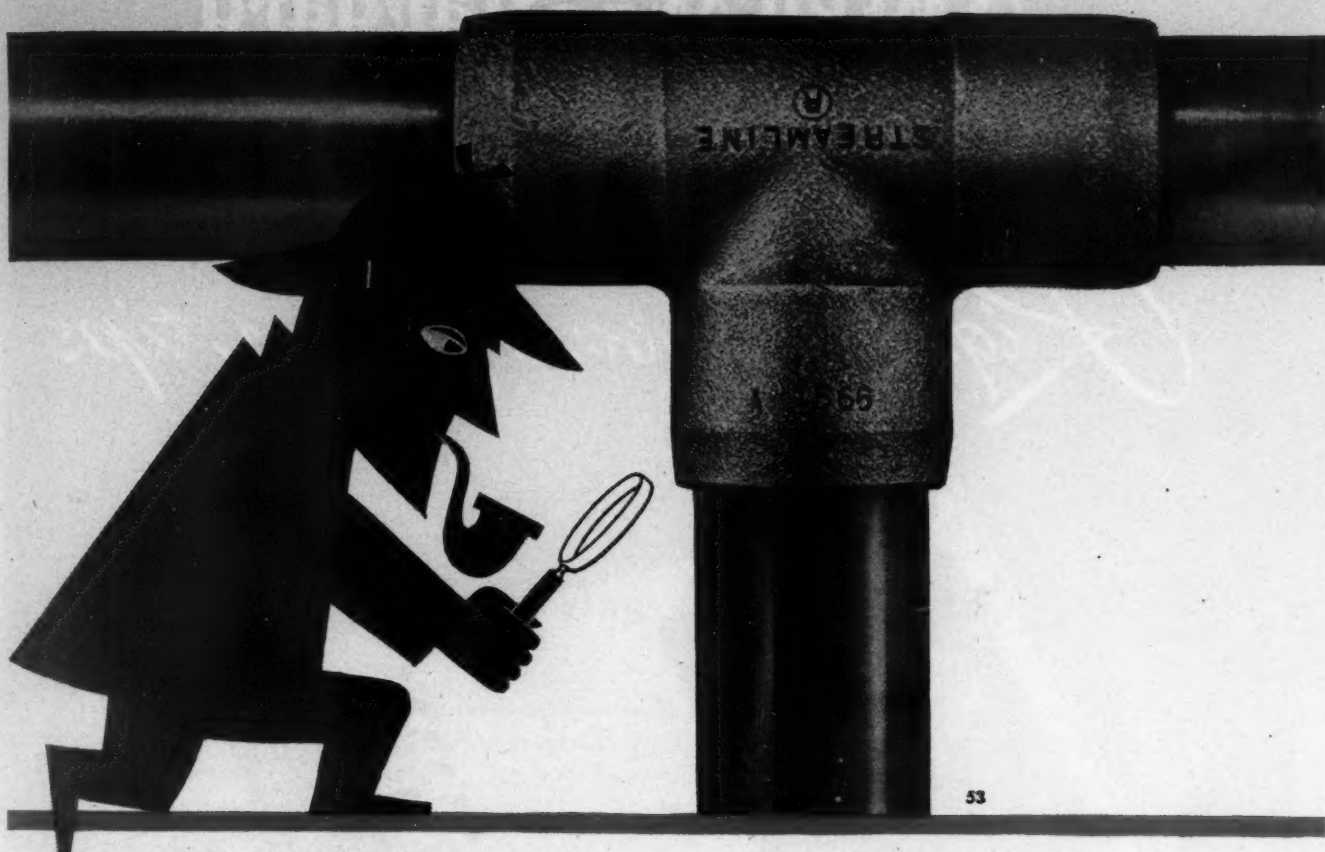
*There is no charge for this service.* Just drop a line to Bigelow Carpet Counsel, at the address below. Your inquiry will receive prompt attention.

## BIGELOW Rugs and Carpets

140 MADISON AVENUE, N. Y. C.

Beauty you can see... quality you can trust... since 1825

## solved: the case of the cost-minded customer



### *Streamline* COPPER TUBE AND SOLDER TYPE FITTINGS COST LESS TO INSTALL — COST LESS IN THE LONG RUN

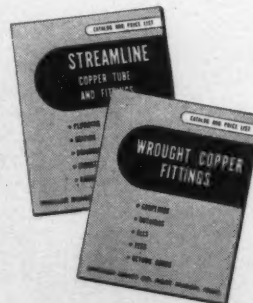
The mystery of how to sell a cost-minded customer an all-copper supply and drainage system is neatly solved — with STREAMLINE products. For he can easily be shown the savings in installation time and the value of extra years of service of a STREAMLINE copper installation as compared to a rustable ferrous system.

The time required for roughing-in is cut down — because the uniform depth of STREAMLINE solder joints makes it easy to compute the exact length of tubing needed. The time required for handling is much less because copper tubing is approximately one-third the weight of iron pipe of the same length and size. (Being threadless, copper tube walls need be only one-third as thick.) Installation time is further decreased because no heavy, bulky pipe vise or stock and die are needed. For drainage and industrial piping, time is also saved because STREAMLINE tube sizes, even up to 10", are produced in 20 ft. lengths. A

STREAMLINE installation not only reduces total job cost to the customer — it also increases the number of jobs a contractor can handle per month.

The extra years of service that any customer will get in a STREAMLINE installation is guaranteed by two facts: (1) It is all copper which cannot rust and (2) it is a snug-fitting, tightly joined system that tests leak-proof on the first try and won't develop leaks later. The years of pioneering, development, engineering and manufacturing experience of the Mueller Brass Co. guarantee an installation that is permanent and trouble-free.

See your jobber for further information or write for Catalog S-350 and W-250 describing the complete line of cast supply and drainage fittings and the complete line of wrought fittings through 4".



**MUELLER BRASS CO., PORT HURON 7, MICHIGAN**



# AMERICAN-Standard

First in heating...first in plumbing

*Right at your finger tips*



# all the plumbing fixtures and fittings you'll need for any job

in the new, time-saving **AMERICAN-Standard** catalogue

HERE, in a single, compact book are the complete facts on the most complete line of quality plumbing fixtures on the market . . . ready for quick and accurate specification.

The American-Standard Plumbing Fixtures Catalogue—the only one of its kind in the field—is functionally arranged. The whole story on each product is given in the minimum of space, yet with exact specifications, complete information and illustrations. Variations of style and fitting are grouped together . . . you don't have to *hunt* for combinations. There are even color illustrations, and charts showing all the colors in which the

various plumbing fixtures can be furnished.

It is good to know that our new plumbing fixtures catalogue has met with enthusiastic approval (witness the extracts of letters shown on this page). Accordingly, the same catalogue technique will be applied to the complete line of American-Standard Heating Equipment. This is just another example of the effort that goes on behind the scenes at American-Standard . . . making sure that architects have the latest information, in easy-to-use form, on all of the famous American-Standard products. **American Radiator & Standard Sanitary Corporation**, P. O. Box 1226, Pittsburgh 30, Pa.

## HERE'S WHAT ARCHITECTS ARE SAYING:



"This catalogue is by far the most attractive that has come into our office. It is the clearest presentation of plumbing fixtures that I have yet seen."

"...vastly improved catalogue on plumbing fixtures"



"... its organization is such that the necessary information is readily available, and it is presented in such form as to be a pleasure to present to clients for their consideration."



"...an excellent job"



"Occasionally a manufacturer does something that puts him away out front in the opinion of those who use his literature in every-day conduct of their business, and you surely have done it this time with your new catalogue."



"...very complete"

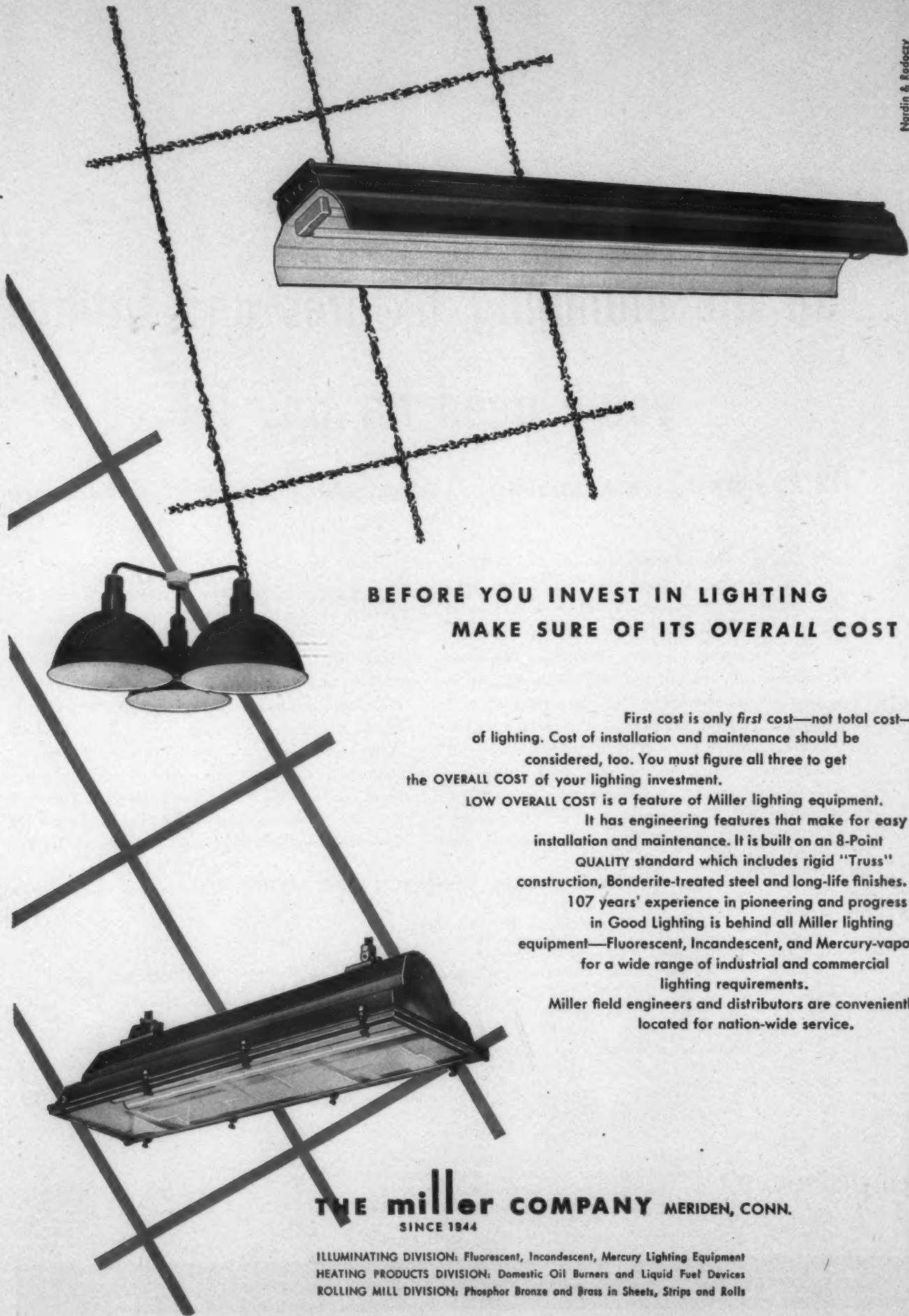


LOOK FOR THIS MARK OF MERIT

*Serving home and industry*

AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON





**BEFORE YOU INVEST IN LIGHTING  
MAKE SURE OF ITS OVERALL COST**

First cost is only *first* cost—not total cost—of lighting. Cost of installation and maintenance should be considered, too. You must figure all three to get the **OVERALL COST** of your lighting investment.

**LOW OVERALL COST** is a feature of Miller lighting equipment.

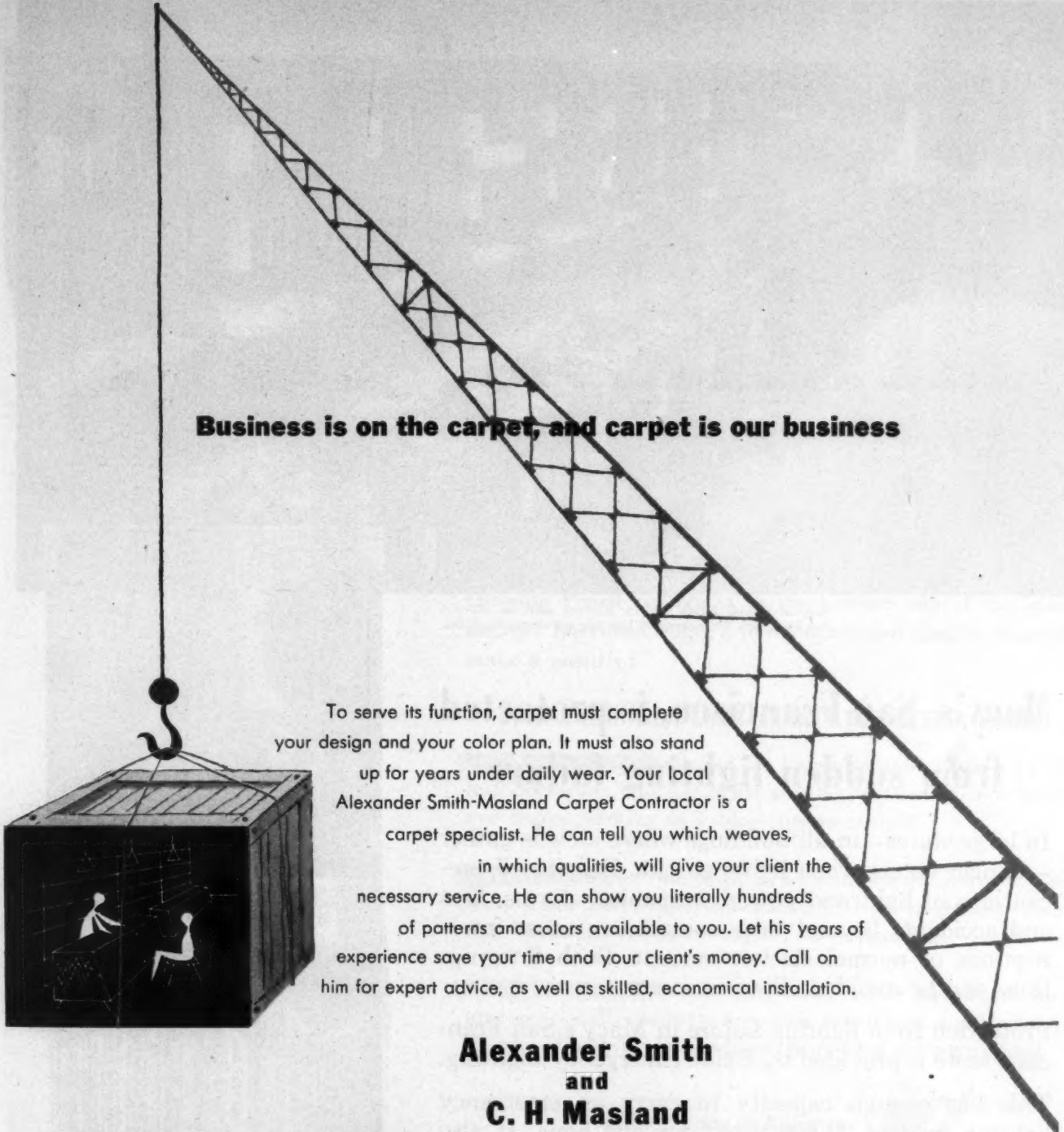
It has engineering features that make for easy installation and maintenance. It is built on an 8-Point **QUALITY** standard which includes rigid "Truss" construction, Bonderite-treated steel and long-life finishes.

107 years' experience in pioneering and progress in Good Lighting is behind all Miller lighting equipment—Fluorescent, Incandescent, and Mercury-vapor—for a wide range of industrial and commercial lighting requirements.

Miller field engineers and distributors are conveniently located for nation-wide service.

**THE miller COMPANY** MERIDEN, CONN.  
SINCE 1844

ILLUMINATING DIVISION: Fluorescent, Incandescent, Mercury Lighting Equipment  
HEATING PRODUCTS DIVISION: Domestic Oil Burners and Liquid Fuel Devices  
ROLLING MILL DIVISION: Phosphor Bronze and Brass in Sheets, Strips and Rolls

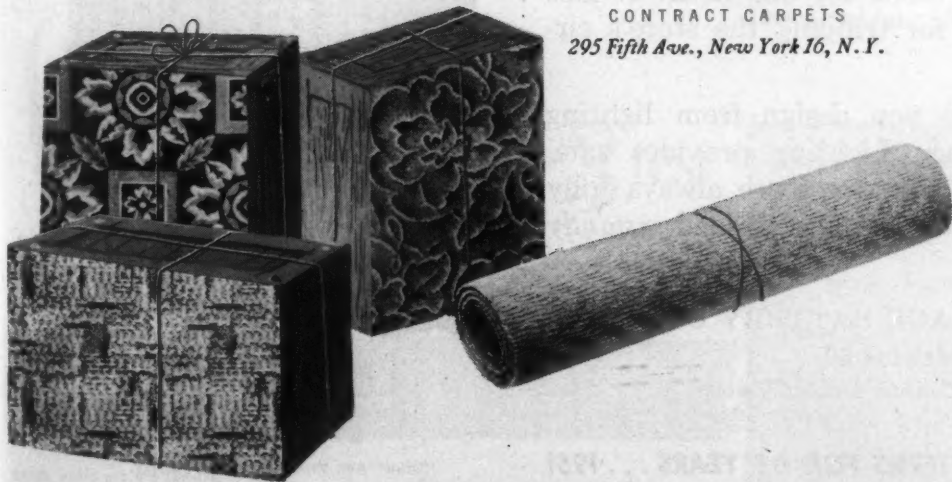


**Business is on the carpet, and carpet is our business**

To serve its function, carpet must complete your design and your color plan. It must also stand up for years under daily wear. Your local Alexander Smith-Masland Carpet Contractor is a carpet specialist. He can tell you which weaves, in which qualities, will give your client the necessary service. He can show you literally hundreds of patterns and colors available to you. Let his years of experience save your time and your client's money. Call on him for expert advice, as well as skilled, economical installation.

**Alexander Smith  
and  
C. H. Masland**

CONTRACT CARPETS  
295 Fifth Ave., New York 16, N. Y.







Part of 60-cell Exide FM-11 Battery used in Macy's, San Francisco, for emergency lighting and circuit breaking.

## Macy's, San Francisco, is protected from sudden lighting failure

In large stores—in all buildings where crowds gather—danger enters when lights go out. Despite all precautions of light and power companies, storms, fires and accidents beyond their control can cause interruptions of normal electric current. Such interruptions can be avoided. For instance:

Protection from lighting failure in Macy's San Francisco store is provided by Exide Emergency Lighting.

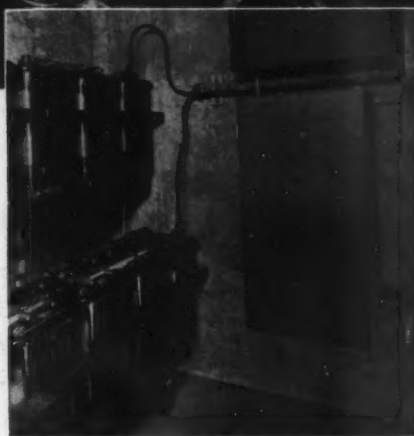
This has enough capacity to carry an emergency lighting load of 22,500 watts for one hour. It also supplies battery power for tripping the store's circuit breakers.

Safeguard the buildings you design from lighting failure. Exide Emergency Lighting provides safe, sure, modern protection. Batteries are always fully charged, ready to take over the lighting load *instantly* and *automatically*.

THE ELECTRIC STORAGE BATTERY COMPANY  
Philadelphia 32

*Exide Batteries of Canada, Limited, Toronto*

1888 . . . DEPENDABLE BATTERIES FOR 63 YEARS . . . 1951



Equipment for Macy's Exide Emergency Lighting includes an H12 charger and an H22534 automatic transfer switch.

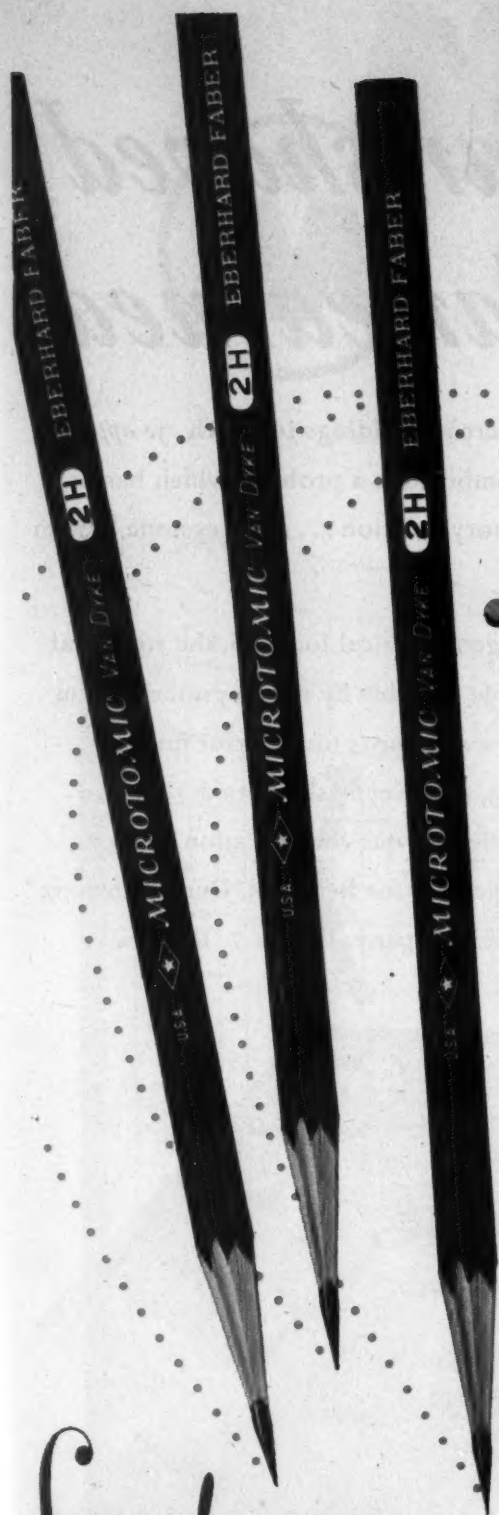


One of the West Coast's great department stores.

# Exide

EMERGENCY  
LIGHTING

"Exide" Reg. Trade-mark U. S. Pat. Off.



Never **OFF-GRADE SOFT...**  
Never **OFF-GRADE HARD...**

**ALWAYS IDENTICAL!**

*The all-new*  
**MICROTOMIC**

Test 3 at our expense...you'll find every New MICROTOMIC Drawing Pencil **IDENTICAL** to every other one of the same degree! Eberhard Faber's newly-developed quality controls make it positive!

**EVEN THEIR 'NEW LOOK' MAKES FOR BETTER WORK**

**NEW DUSK GRAY**, selected by hundreds of draftsmen as the least distracting, most distinctive drawing pencil color. New 'bull's-eye' degree marking on 3 sides—always in sight!

**LESS SMUDGE** on your tracings, because New MICROTOMIC lines leave fewer loose, smearable particles! New Hi-Density Wood-clinched leads—stronger, tougher, slower wearing!

**CLEARER PRINTS**, because Microtomic's new HI-DENSITY lines are exceptionally opaque to the actinic rays of high-speed 'printers'. Result...*dead-white* lines, without feathering or blurry edges!

New Dynamic Balance  
Lead Holder...try one!



**free!** TRY THE "3-against-3" test

3 New MICROTOMIC Drawing Pencils—**FREE!** Test them against your present pencils—see which is more uniform! Mail the coupon for your **FREE** Test Samples now!

**EBERHARD FABER**

TRADE MARKS REG. U. S. PAT. OFF.

EBERHARD FABER PENCIL COMPANY, DEPT. AR-2,  
37 GREENPOINT AVENUE, BROOKLYN 22, N. Y.

Send me 3 New MICROTOMIC Drawing Pencils **FREE**. I'll test their uniformity against my present pencils. Degree..... (specify only one)

Name.....

Firm.....

Street.....

City..... State.....





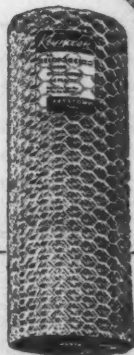
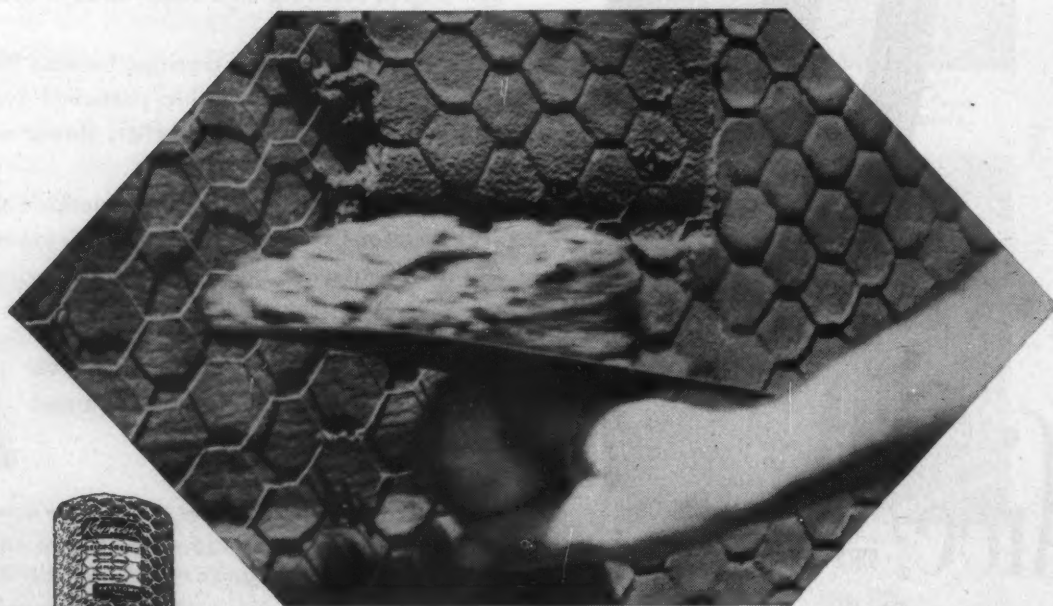
# *A dollar shaved is a dollar earned*

Designing homes and commercial buildings in which *eye appeal* and *dollar savings* must be combined is a problem which has at least one completely satisfactory solution . . . the Keystone System of Stucco Application.

In any price bracket, in any geographical location, the structural versatility and durability made possible by the Keystone System of Stucco Application sets new standards for exterior finishes.

For interiors and overcoating, too, Keymesh offers design and construction advantages worthy of your consideration. Let us send you the booklet, "Specification for Beautiful, Durable Stucco."

Write: Keystone Steel & Wire Company, Peoria 7, Illinois.



**KEYSTONE SYSTEM OF  
STUCCO APPLICATION  
WITH KEYMESH**



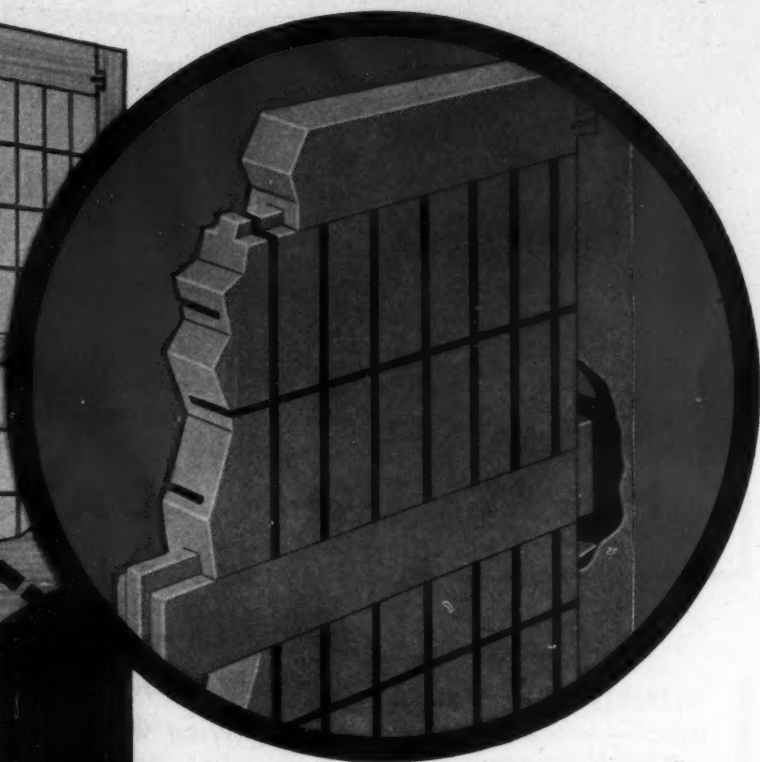
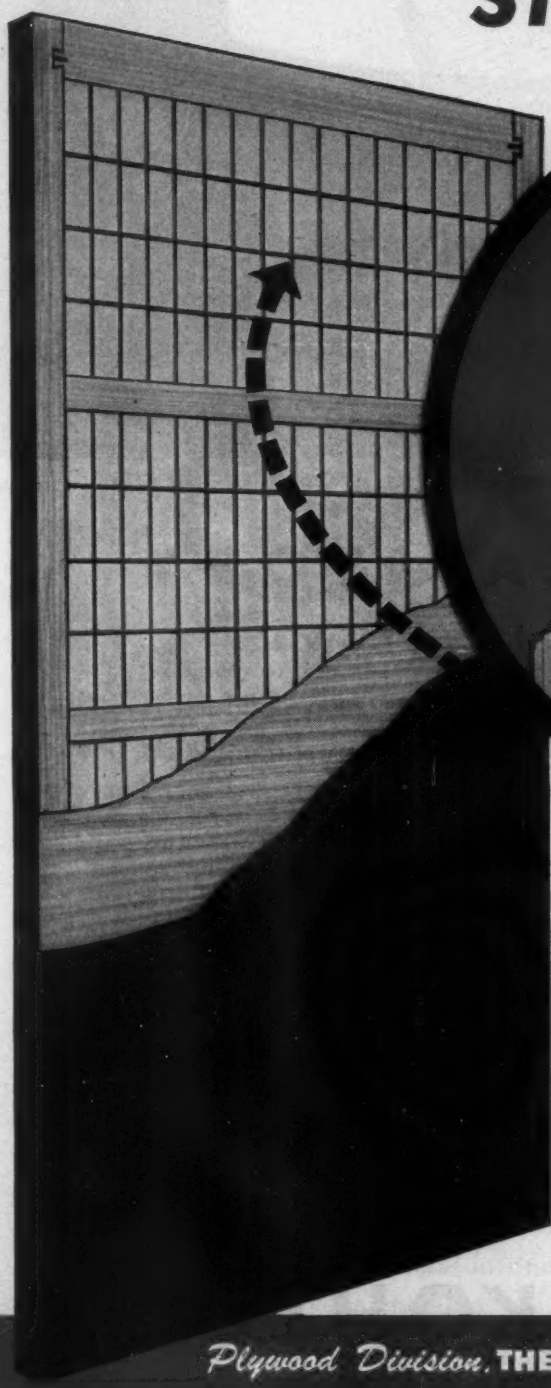
... By the Makers of: Tin Wire, Welded Fabric, Non-Climbable Fence, Halls, Gates, Keystone Poultry Netting, Red Brand Fence and Red Top Steel Posts



# MENGEL

SOLID-CORE *Flush* DOORS

have this exclusive  
**STABILIZED CORE**

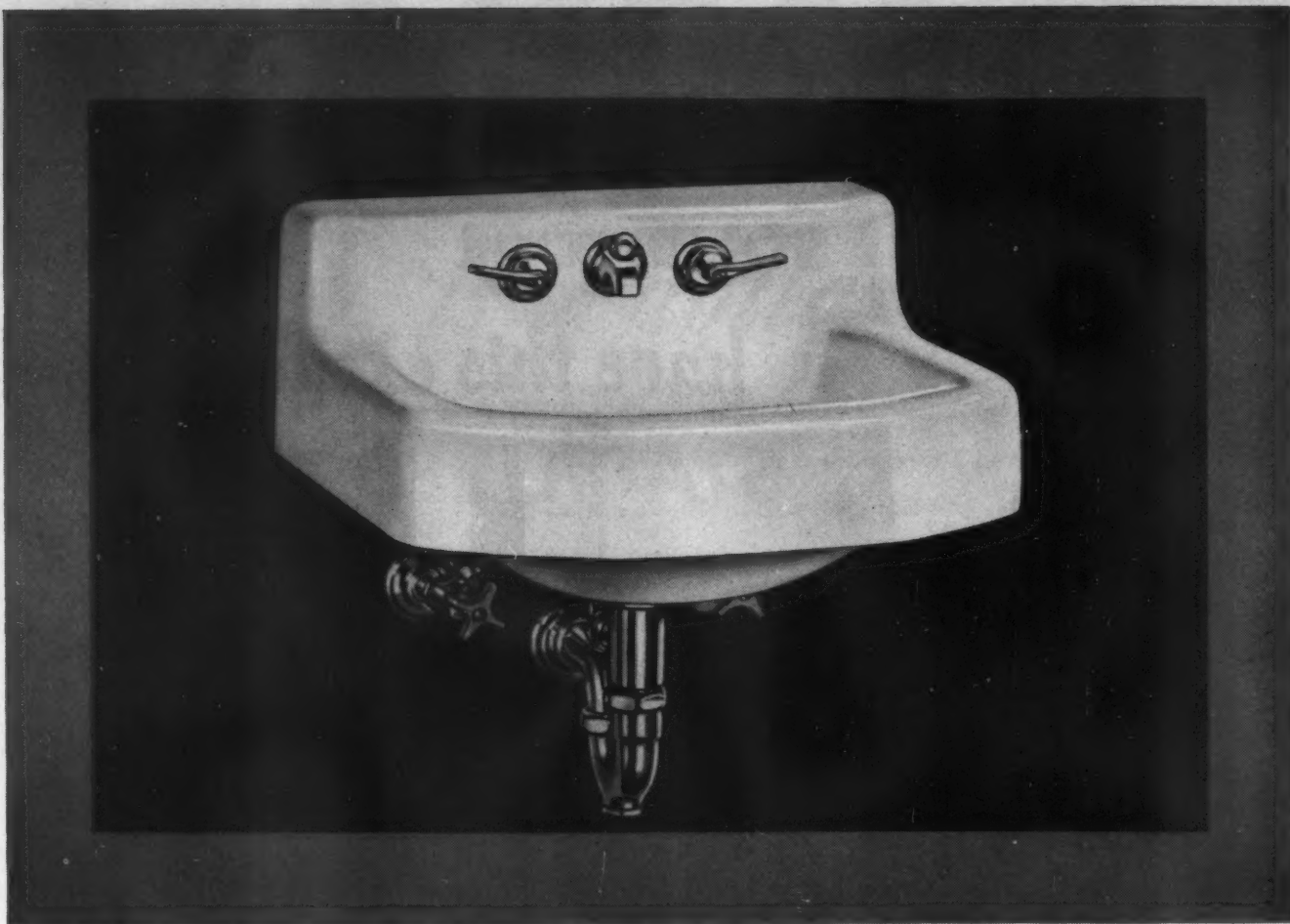


Mengel's hardwood Stabilized Solid Cores are deeply slotted both with and across the grain to absorb expansion and contraction internally *without changing the dimensions of the door*. The entire poplar core assembly is tongued-and-grooved into the dove-tailed wedge-locked hardwood frames, with enough tolerance to absorb stresses.

Designed and built to withstand severest conditions, Mengel Solid-Core Flush Doors are *better*. *Get all the facts*. Write today for new full-color A.I.A. descriptive catalog, including specifications.

*Plywood Division, THE MENGEL COMPANY, Louisville 1, Kentucky*





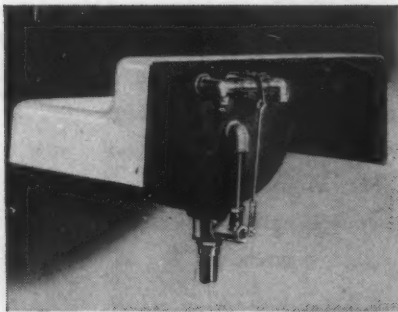
K-2700-A. 19 x 17", 22 x 19". Latter with built-in soap dishes.

## HAMPTON LAVATORY

*without overflow*

The popular Hampton enameled iron lavatory is now available without overflow—an innovation which is receiving wide acceptance.

The Hampton is extensively used in homes and apartments. Features that appeal to home planners, architects and builders include the unobstructed shelf across the back, ample basin, compact mixer fitting with Synchro pop-up drain. The lustrous, easy-to-clean Kohler enamel is fused to non-flexing iron, cast for rigidity. Fittings are of durable brass, chromium-plated.



The Hampton is also offered with a brass overflow. (K-2701-A).

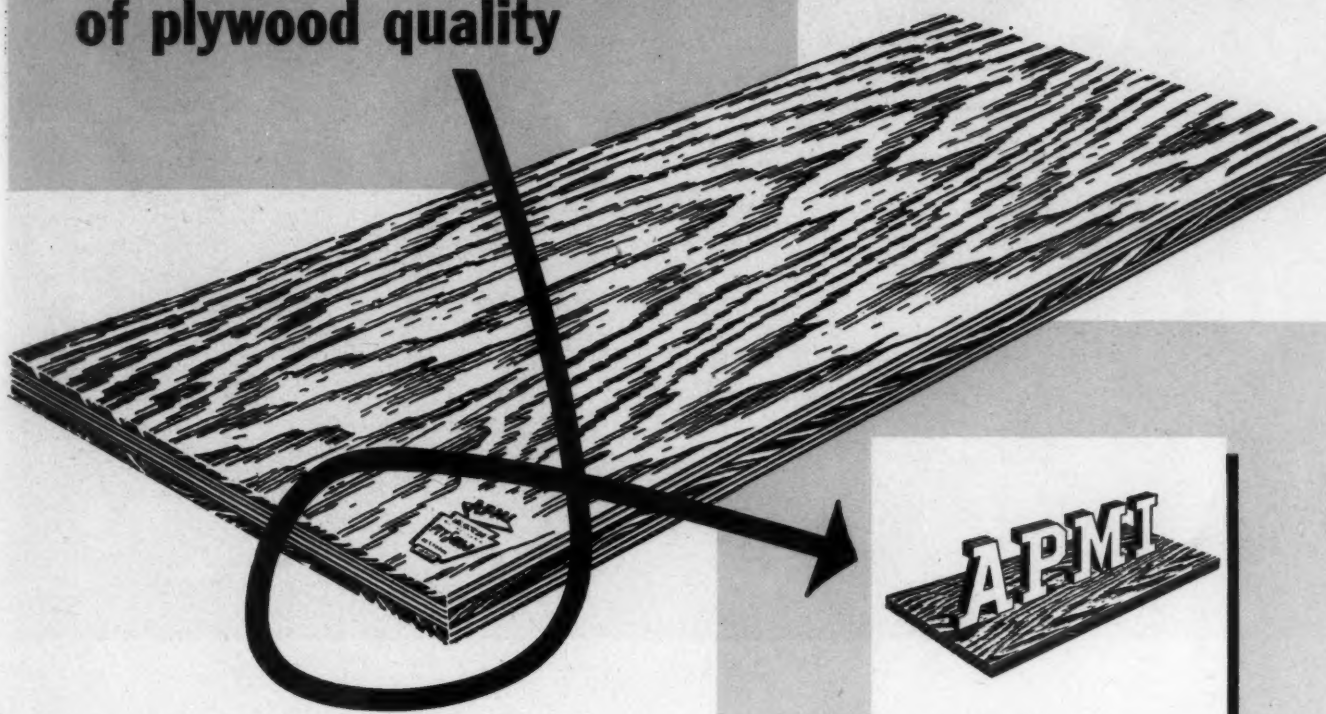
Kohler Co., Kohler, Wisconsin. Established 1873.

# KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS • AIR-COOLED ENGINES • PRECISION PARTS

# TRADEMARKED

as well as grademarked  
...your double guarantee  
of plywood quality



Something has been added in the labeling of plywood produced at Associated Plywood Mills, Inc. It is the APMI trademark, and you'll find it together with the DFPA grademark on both exterior-type and interior-type panels manufactured by this company.

This combination of trademark and grade-mark is your assurance that regardless of where you buy APMI plywood, you get the guaranteed products of a pioneer mill in the industry... There is a type, size and grade of APMI plywood for every building need... Sold from centrally located sales warehouses, and sold by experienced plywood men who welcome your inquiries for general information, for prices, for delivery schedules.

#### APMI SALES WAREHOUSES

Eugene and Willamina, Oregon  
San Francisco, 925 Toland St., 24  
Dallas, 4814 Bengal St., 9  
St. Louis, 4268 Utah St., 16

#### APMI SALES OFFICES

519 Johnston Building  
Charlotte, North Carolina  
31 State St., Boston, Mass.

#### APMI MILLS

PLYWOOD—Eugene, Oregon  
PLYWOOD—Willamina, Oregon  
LUMBER—Roseburg, Oregon

## ASSOCIATED PLYWOOD MILLS, INC.

General Offices: Eugene, Oregon





## something about a beaver...

Maybe it's because we're in this business of air conditioning that we just can't get away from our work. Everywhere we go there's air. Sometimes it's too cold, sometimes it's too warm, sometimes too dry, or too moist. Usually we find ourselves figuring out ways to warm it, cool it, clean it, humidify it, dry it—move it from one place to another in the thriftiest and most efficient way. For air is a material to be worked with just like wood, stone, steel, glass, cement. It can be conditioned exactly to your specifications and to the

purposes and requirements of your clients.

For some 25 years now we've been sharpening our teeth on some of the toughest assignments in the business. From **usAIRco** designers and engineers has come a constant stream of new and improved equipment incorporating new ideas in theory, concept, design. And while we've been at it for a good while—we haven't lost any of our eagerness or enthusiasm. Feel free to call on us for any advice or cooperation we can provide.

***The name that means  
everything in AIR CONDITIONING***

**usAIRco**

**Whether for new construction  
or remodeling, you can specify  
savings for your clients**

**with *us* AIRco's**

# Modu-aire

DUCTLESS AIR CONDITIONING FOR MULTI-ROOM BUILDINGS



**WEATHER TO MATCH ITS NAME** is offered by the North Shore Villas, Miami Beach, Florida. Each room has its own conditioning unit operated from a central system. Guests simply dial the weather they want.



**NO DUCTWORK, partitions or wasted space!** Slim copper tubes hidden inside the walls carry the cooling or heating medium. Modu-aire is quickly, easily installed. Note compactness, attractive design.

## PRACTICAL POINTERS

Send for new, free  
booklet, "Practical  
Pointers on Air  
Conditioning."

## UNITED STATES AIR CONDITIONING CORPORATION

3302 Como Avenue S. E., Minneapolis 14, Minnesota

- ☐ Please send me your "Practical Pointers" Booklet.
- ☐ Please send complete information on Modu-aire.

Name \_\_\_\_\_

Firm \_\_\_\_\_

City \_\_\_\_\_

Zone \_\_\_\_\_ State \_\_\_\_\_



**\* NON-WARPING**

ELECTRO LUSTREX Styrene  
Louvers are guaranteed to  
remain warp-free under  
ordinary conditions of use.

**\* DURABLE**

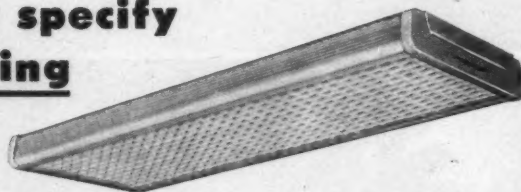
ELECTRO LUSTREX Styrene  
Louvers resist chipping and  
cracking...give extra  
years of service.

**\* MORE ATTRACTIVE**

Sparkling white ELECTRO  
LUSTREX Styrene Louvers  
are guaranteed against  
discoloration for life under  
normal use.

## ELECTRO fluorescent fixtures

now let you safely specify  
the added shielding  
advantages of



## LUSTREX\* styrene

Added light—added beauty—and added assurance of complete satisfaction are all now available in ELECTRO commercial fluorescent luminaires with LUSTREX Styrene louvers. Only ELECTRO Lustrex Styrene Fluorescents offer these better lighting features:

- Guaranteed against warping and discoloration under normal use for the life of the fixture.
- No light loss! Translucent side panels transmit light—do not trap it.
- Louver panels are moulded—not just interconnected—for added rigidity and superior conformation...the dimensions of the openings remain constant!

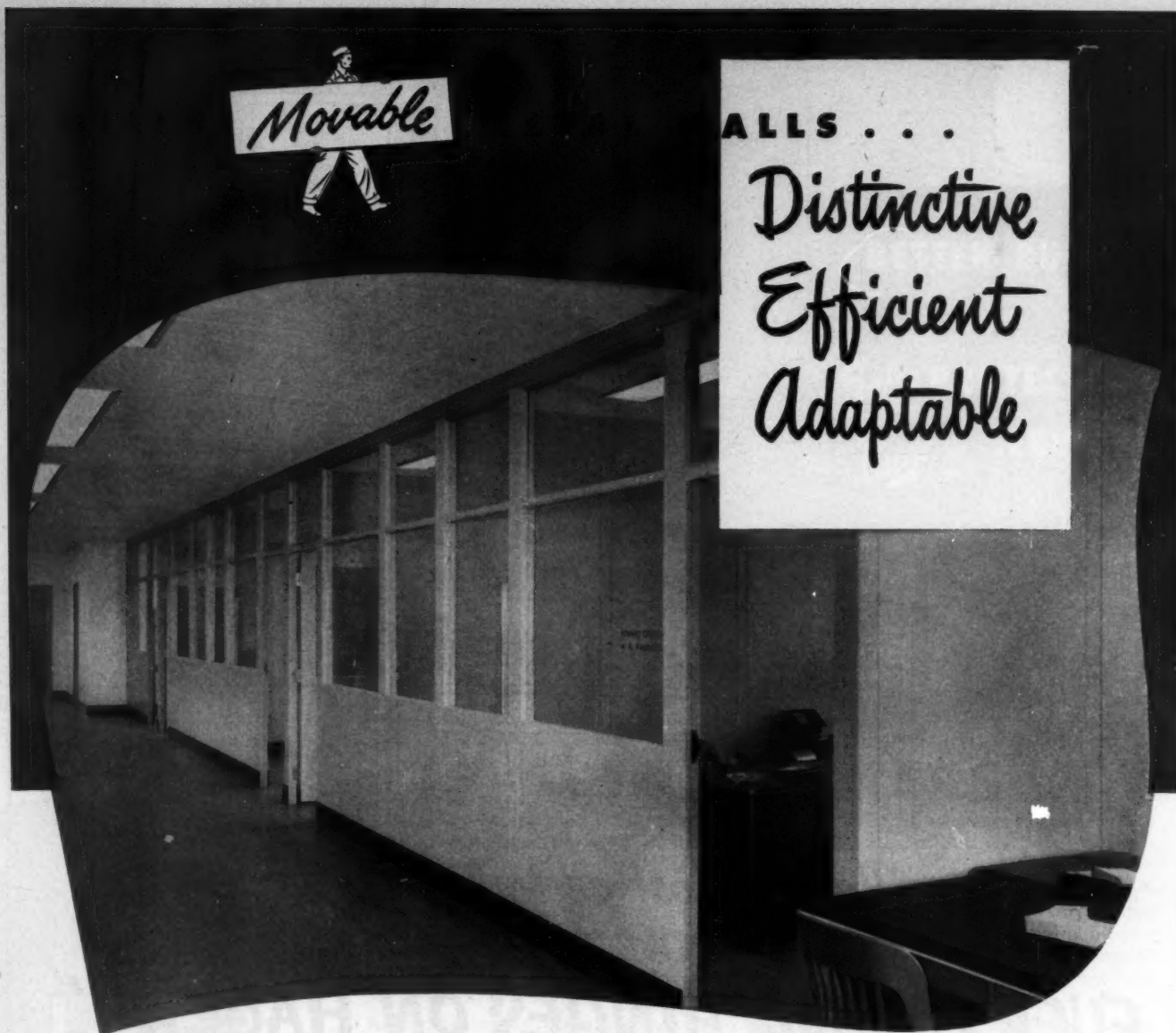
CHOOSE FROM A COMPLETE VARIETY OF SMARTLY STYLED, MODERN COMMERCIAL FIXTURES...featuring the ELECTRO "Basic Unit," the exclusive engineering idea that permits easy interchangeability of luminaires.

ALSO! LUSTREX STYRENE IN A COMPLETE RANGE OF SLIMLINE MODELS.

### **ELECTRO MANUFACTURING CORPORATION**

2000 WEST FULTON STREET • CHICAGO 12, ILLINOIS

\*A product of Monsanto Chemical Co.



General Office  
Motorists Mutual Insurance Company  
Columbus, Ohio



You'll find this new 48-page Mills Catalog bound into Sweet's File, Architectural, for 1951—or we'll be glad to send you an easy-to-handle copy for your individual use. Just ask for Catalog No. 51.

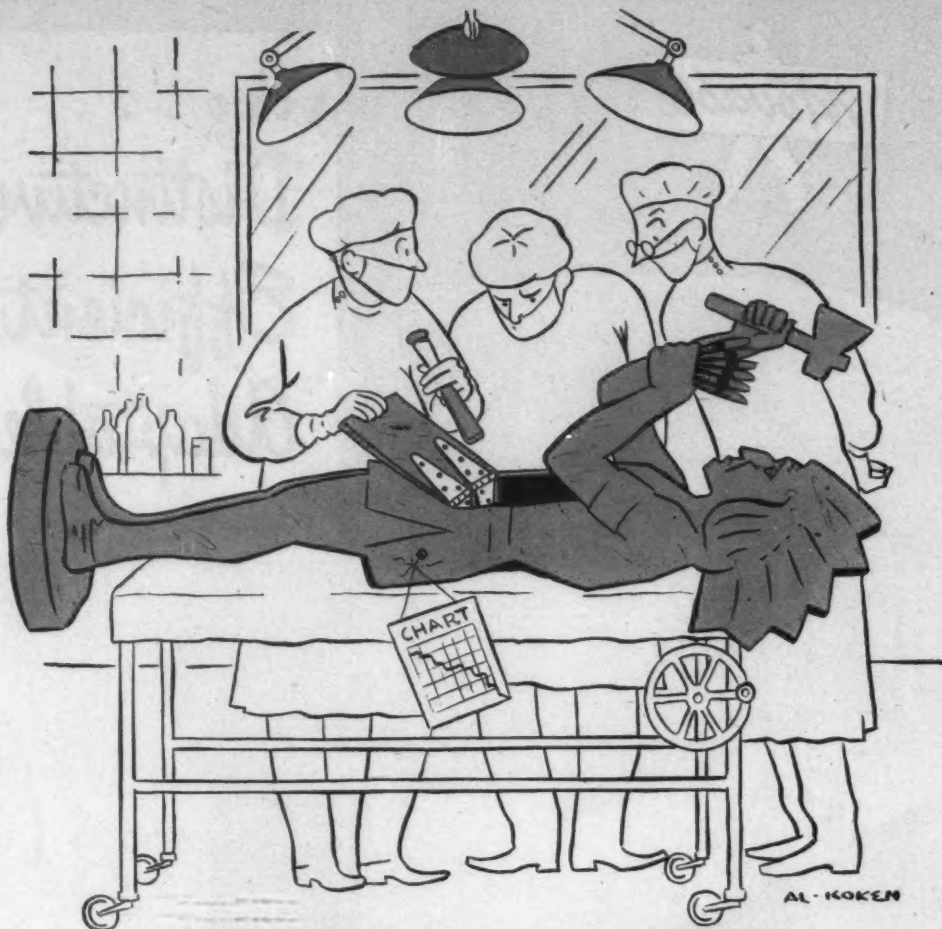
**M**ILLS MOVABLE METAL WALLS are distinguished by the simple refinement of their architectural design, the permanent solidity of their construction, the pleasing soft colors of their baked-on enamel finishes that keep their fresh new look with no other maintenance than ordinary washing.

Insulated and soundproofed, with surfaces specially treated to eliminate all harsh light reflection, they create beautifully efficient business interiors.

Yet when progress requires changes in office layout, Mills Walls can be moved—quickly, easily, at very low cost—and completely re-used to fit any new space arrangement. An entire change can generally be accomplished overnight without interruption of business routine.

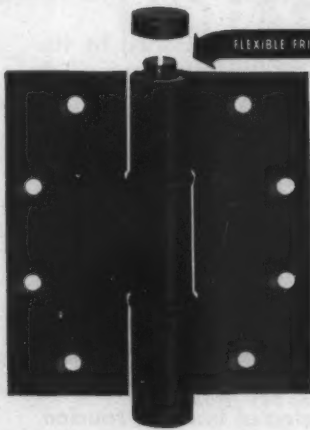
**THE MILLS COMPANY**  
961 WAYSIDE ROAD CLEVELAND 10, OHIO





*"Haven't Lost an Indianectomy  
since we found out*

**EVERYTHING HINGES ON HAGER!\***



HAGER No. 1147  
EXTRA HEAVY FRICTION-TYPE BUTT HINGE  
Available also with "Hospital-Type" rounded top ends  
to prevent attaching ropes, wires, etc.

#### ELIMINATE NOISY, SLAMMING DOORS!

Exclusive flexible friction adjustor in the barrel of Hager Friction-Type Butts controls the friction exerted to just the desired degree. Proper adjustment of friction pressure prevents doors from slamming shut . . . holds them open to any desired ventilating position.

Removal of screw-type-plug at top end of butt provides quick access to the slotted pin. A few screw driver turns in one direction exert additional friction that retards the ease of door movement; several screw driver turns in the other direction eliminate friction . . . allow door to silently float back and forth.

Specify Hager Friction-Type Butts in hospitals or other buildings where quietness is either desirable or a necessity.

C. Hager & Sons Hinge Mfg. Co. • St. Louis, Mo.  
Founded 1849—Every Hager Hinge Swings on 100 Years of Experience





**BETTER BUILT**  
for  
*Safer* **PROTECTION**  
*Rugged* **SERVICE**

# MEDART

## STEEL LOCKERS

Before you specify or buy, compare them all with Medart! Check every type of locker available and learn for yourself why Medart offers you more in superior features—tamper-proof security—longer life—skillful engineering—precision manufacture—more of everything that means extra value and years of extra service for the price.

No other locker made will outlast a Medart in durability or appearance! Welded steel channel frame construction—dual pickproof positive locking mechanism—sturdier bottoms supported on steel channels—malleable cast iron adjustable legs—heavier, stronger non-sag hinges—modern, functional design—are just a few of the features you'll find in Medart Lockers.

An expert engineering staff offers you years of experience to help analyze and solve every locker problem, no matter how complicated, no matter what the budget. The service is yours for the asking.

*Write For Catalog*

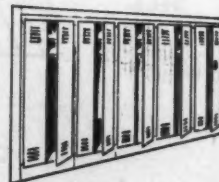


**FRED MEDART PRODUCTS, INC.**  
3540 DE KALB ST. ST. LOUIS 18, MO.  
For 78 Years The Standard Of Quality



The finest permanent and portable Wire Basket Shelving is made by Medart in sizes for every need.

Medart Lockerobes for elementary schools are equipped with the exclusive "Simultaneous Opening—Master Door Control".

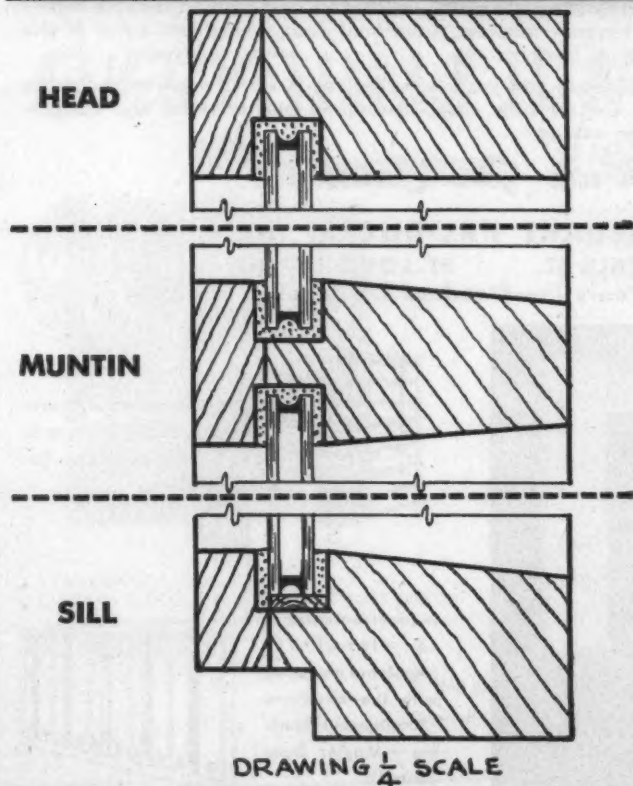




# VISUAL FRONT DETAILS FOR YOUR STOREFRONT FILE



Shultz & Behrie Modernization Co., East Orange, New Jersey



## Insulated Show Window

This storefront was designed to provide a full view of the merchandise on the sales floor . . . to gain the many sales advantages of a Visual Front. To help guard against loss of clear visibility due to steam and frost, *Thermopane*\* insulating glass was used.

Thus, a transparent insulated wall was achieved. And achieved simply—as the details at the left will testify. Notice how the wood framing members are cut to provide ample space for the *Thermopane* units and glazing compound. Stops are designed so they cannot press against the glass. *Thermopane* units in sizes used for storefronts are composed of  $\frac{1}{4}$ " plate glass with  $\frac{1}{2}$ " air space between—total thickness 1".

Many design applications for glass are illustrated in our Visual Fronts Book. Write for your copy. \*®

**LIBBEY·OWENS·FORD**

6021 Nicholas Building, Toledo 3, Ohio

# Electrical distribution IS THE **LIFELINE**

OF YOUR PLANT

*Select it with care!*

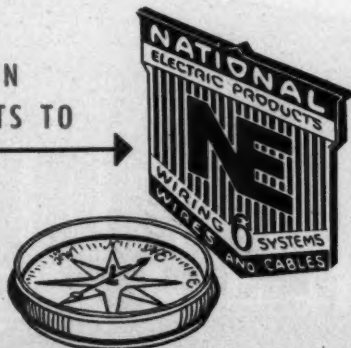
Selecting the *right* distribution system gives your plant greater efficiency . . . better layout . . . lower operating costs. NATIONAL ELECTRIC can help you specify the electrical system that fits *your* needs the best, because NE makes them *all*!

- INDUSTRIAL BUSWAY SYSTEMS
- RIGID AND FLEXIBLE CONDUIT SYSTEMS
- METALLIC-SHEATHED WIRING SYSTEMS
- NON-METALLIC-SHEATHED WIRING SYSTEMS
- SURFACE METAL RACEWAY SYSTEMS
- INSULATED WIRES AND CABLE of all types including: Building wires and cables • Power cables • Appliance and equipment wires and cables • High-temperature wires and cables • Signal and control circuit wires and cables • Special wire and cables made to your own specifications.

**National Electric**  
PRODUCTS CORPORATION

Let our Field Representatives help you specify the *right* electrical distribution system to fit *your* requirements.

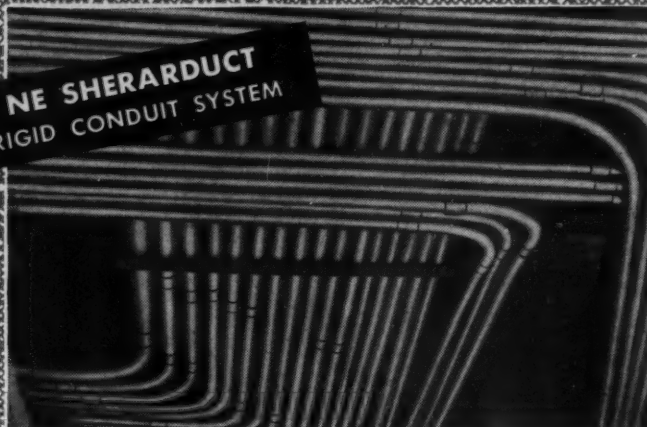
EVERYTHING IN  
WIRING POINTS TO



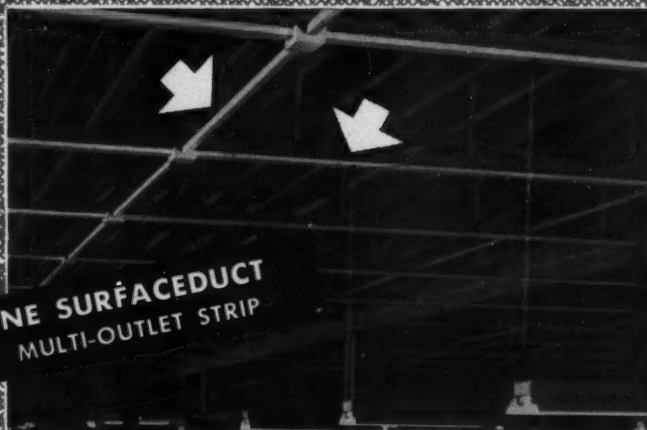
**NE BUSWAYS**  
ELECTRICAL BUSBAR SYSTEM



**NE SHERARDUCT**  
RIGID CONDUIT SYSTEM



**NE SURFACEDUCT**  
MULTI-OUTLET STRIP



**NATIONAL ELECTRIC PRODUCTS CORPORATION**  
1327 CHAMBER OF COMMERCE BUILDING, PITTSBURGH 19, PA.

Please send me your literature on:

☐

Industrial electrical busbar systems

☐

Rigid conduit systems

☐

Multi-outlet strip; Surface Metal Raceways

Name

Company

Address



HARRIS ARMSTRONG'S

famous American Stove Company building



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## a masterpiece of simple design and practical foresight

Harris Armstrong is recognized as one of the nation's ranking architects. The American Stove Company's display-and-headquarters building in St. Louis is a testimonial to his skill as a designer.

But Mr. Armstrong is something else, too—a farsighted, practical specifier. Critical? Yes—of inferior materials and equipment that jeopardize the success of his project. Demanding? Yes—of *proof* of performance; of *proof* of quality. Conscious of initial cost? Yes—but on the basis of ability to decrease maintenance costs in years to come . . . as an investment in economy.

Is it any wonder that we're proud that Day-Brite "BOXCO TYPE" Troffers\* furnish the artificial lighting in the offices throughout the magnificent American Stove Company building?

Is it any wonder that we're proud to be able to quote Mr. Armstrong, "Actually, the selection of lighting fixtures was a simple matter. Day-Brite was the natural choice."

Isn't there proof of the wisdom of Mr. Armstrong's selection in this remarkable fact: Only one man is required to maintain the air-conditioning, plumbing, AND LIGHTING systems. *Only one man!*

Your own projects deserve the advantages of Day-Brite lighting. You owe yourself the guarantee of superb lighting performance at reasonable cost. That guarantee is yours with a Day-Brite specification.

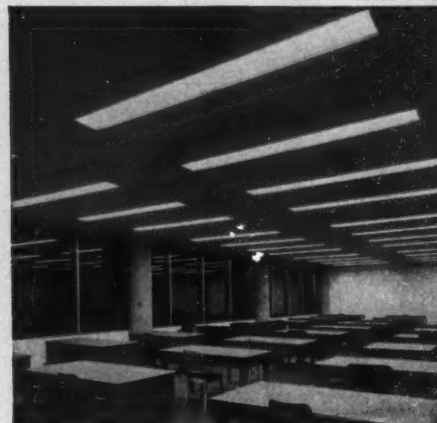
Day-Brite Lighting Inc., 5465 Bulwer Ave., St. Louis 7, Missouri. In Canada: Amalgamated Electric Corp., Ltd., Toronto 6, Ontario. Distributed nationally by leading electrical wholesalers.

HEDRICH-BLESSING STUDIO



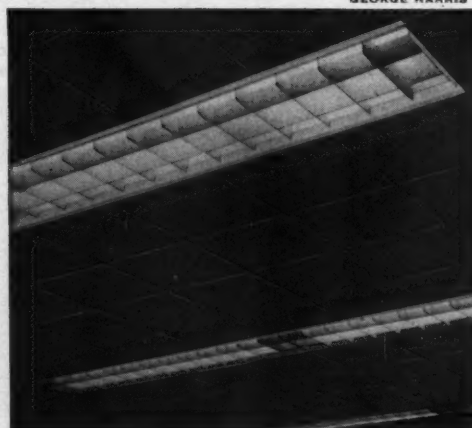
The North exposure presents its breathtaking spectacle of light . . .

HEDRICH-BLESSING ST



And inside, offices are bathed in glareless vision-saving illumination . . .

GEORGE HARRIS



Up close, the Day-Brite "Boxco" troffers reveal smart, functional styling . . .

### \*PRODUCT DATA, DAY-BRITE "BOXCO" TROFFERS

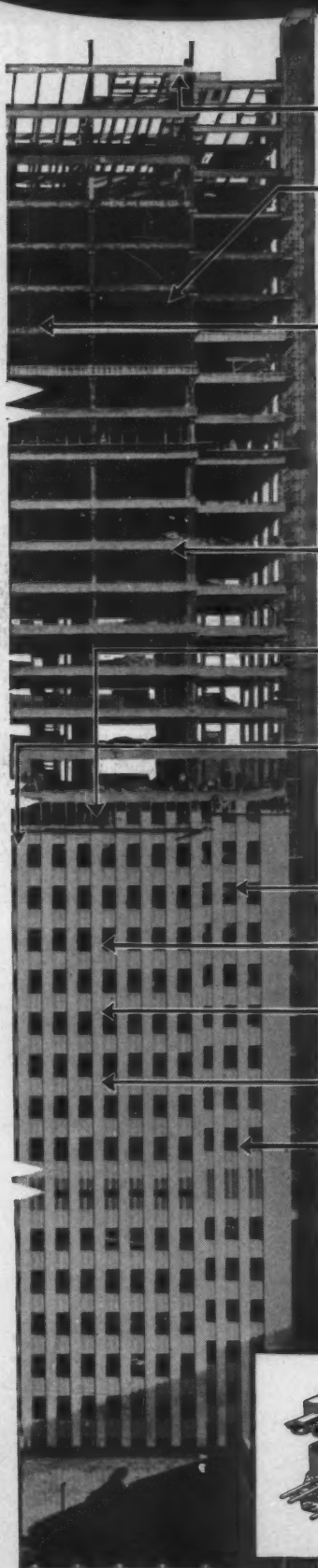
TYPE: Shallow, flange-type for plaster-frame installation. (Also available in snap-in type for Tee-Bar construction.) For two 48", 40-watt Fluorescent lamps. (Also available for 96", 75-watt Slimline lamps.) CONSTRUCTION: Rigid, die-formed, heavy gauge steel. FINISH: Hot-Bonded Super White baked enamel. WIRING: ETL Certified ballasts, no-blink starters. Safety fused.

"DECIDEDLY BETTER"  
**DAY-BRITE**  
*Lighting Fixtures*

Performance and quality guaranteed by the most famous name in lighting . . .



# 40 FLOORS IN 4 MONTHS WITH Q-FLOOR



## STRUCTURAL STEEL WORKER

says he was able to place riveters' forges close to crew on each floor without temporary platforms.

## SPANDREL FIREPROOFERS

claim the work was greatly simplified by carpenter shop moved to each floor. Formwork fabricated near where used. Transporting concrete from material hoist to where it was poured was made much easier by smooth Q-Floors.

## ELECTRICIAN

was able to time work to his own convenience, roughing-in anywhere in the building, without waiting for other subcontractors to vacate floor space.

## MATERIAL ELEVATOR

could work to every floor, increasing the tower height with the framework. Every floor was available for material storage. There was no double handling.

## PASSENGER ELEVATOR

was helped by convenient storage. Several miles of rails were stacked close to where needed but never in the way of other workers.

## STONEMASON

saved time on storage. Only one handling of materials from truck on the street to within 20 feet of where used.

## BRICKLAYER

unhampered by forms or shoring, worked safely and quickly with materials and equipment loaded onto floor immediately behind the men. Streets and sidewalks not needed for storage.

## CARPENTER

moved his shop from floor to floor, with power equipment always nearby.

## SASH CONTRACTOR

had same storage convenience as masons; only one handling of material, every floor being a warehouse.

## HEATING CONTRACTORS

could work on any floor without delay. Every floor was convenient for on-the-spot fabricating.

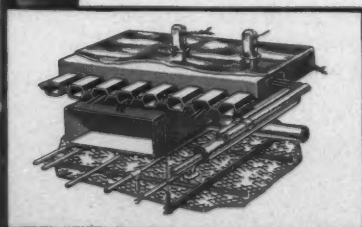
## PLUMBERS

also had complete flexibility of storage and assembly areas.

## AIR CONDITIONING

was speeded by needing no preset inserts for duct hangers. When changes of layout were called for, the flexibility especially was an asset.

Steel Q-Floor is shown here with suspended ceiling and a condensed presentation of mechanical equipment needed in a modern building. No preset inserts.



LOOK BETWEEN THE LINES and you will see the evidence of how Q-Floors reduce the overall cost of a building. The subcontractors say their men were able to work faster. Materials were handled less.

Time saved is merely another way of figuring money saved. Another saving accrues from the earlier completion date you get with Q-Floor construction. Earlier occupancy brings revenue sooner. When the price of Q-Floors is quoted, these savings cannot be actually deducted from the cost of the Q-Floor, but they should be kept in mind.



The General Contractor, and others closely associated with the building found it hard to realize that there were 1,000 men distributed over the building at once. This type of construction permits all the trades to work at one time with smaller groups. This is one reason for the speed—hence the lower cost.

★ ★ ★

PICTURED—The Mellon U. S. Steel (525 Wm. Penn Place) Building, Pittsburgh, when steel frame was completed.

Architects—Harrison & Abramovitz, New York City.

Associate Architect—William York Cocken, Pittsburgh.

Contractor—Turner Construction Co., New York City.


## H. H. ROBERTSON CO.

2404 Farmers Bank Building  
Pittsburgh 22, Pennsylvania



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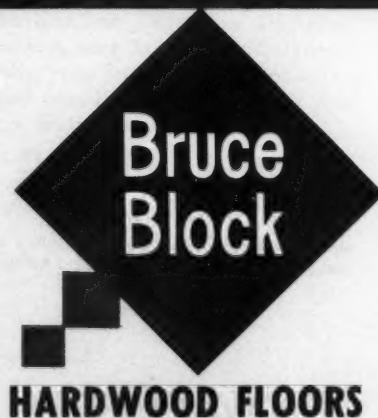
*Modern...in design...in application*

**The ideal floor for use over concrete slab or wood subfloor**

Bruce Block Floors fit right in with modern design and modern construction. From an appearance standpoint, they give smart style and decoration along with the natural, friendly beauty of hardwood. Structurally speaking, Bruce Blocks are most practical and economical because they can be laid in mastic over the concrete slab. Or they can easily be blind nailed over wood subfloors or old wood floors.

Owners find these solid hardwood floors warm, quiet and comfortable underfoot... and so easy to keep clean and shining at all times. They're thrifty, too... will last the life of a home or building. Even after many years of hard service, all their original beauty can be restored by refinishing.

See our catalog in Sweet's Files, and write for new color booklet on "Modern Hardwood Floors of Bruce Blocks."



PRODUCT OF E. L. BRUCE CO., MEMPHIS 1, TENN., WORLD'S LARGEST MAKER OF HARDWOOD FLOORS

Other Bruce Products: Ranch Plank, Strip, Random-width Flooring • Lumber and Wood Parts • Terminix • Floor Cleaner, Waxes, Finishes.





In these times of scarcities it is more than ever important to remember that two or more heads are better than one. Your suppliers, for example, know a great deal about the materials they handle, how to select, specify and install them.

No matter what you buy it will pay you to draw upon this knowledge. It may help you make scarce materials go further, reduce costs of installation, perhaps even suggest a substitute.

AND of course for close collaboration regarding permitted uses of such Revere Building Products as Revere Copper Water Tube, Revere Copper Pipe, Revere Red Brass Pipe, Revere Sheet Copper for Flashing, Revere-Keystone Interlocking Thru-Wall Flashing\* and Revere-Simplex Reglet Flashing\*, get in touch with the Revere Technical Advisory Service through the Revere Distributor nearest you.

SEE OUR CATALOG IN SWEET'S

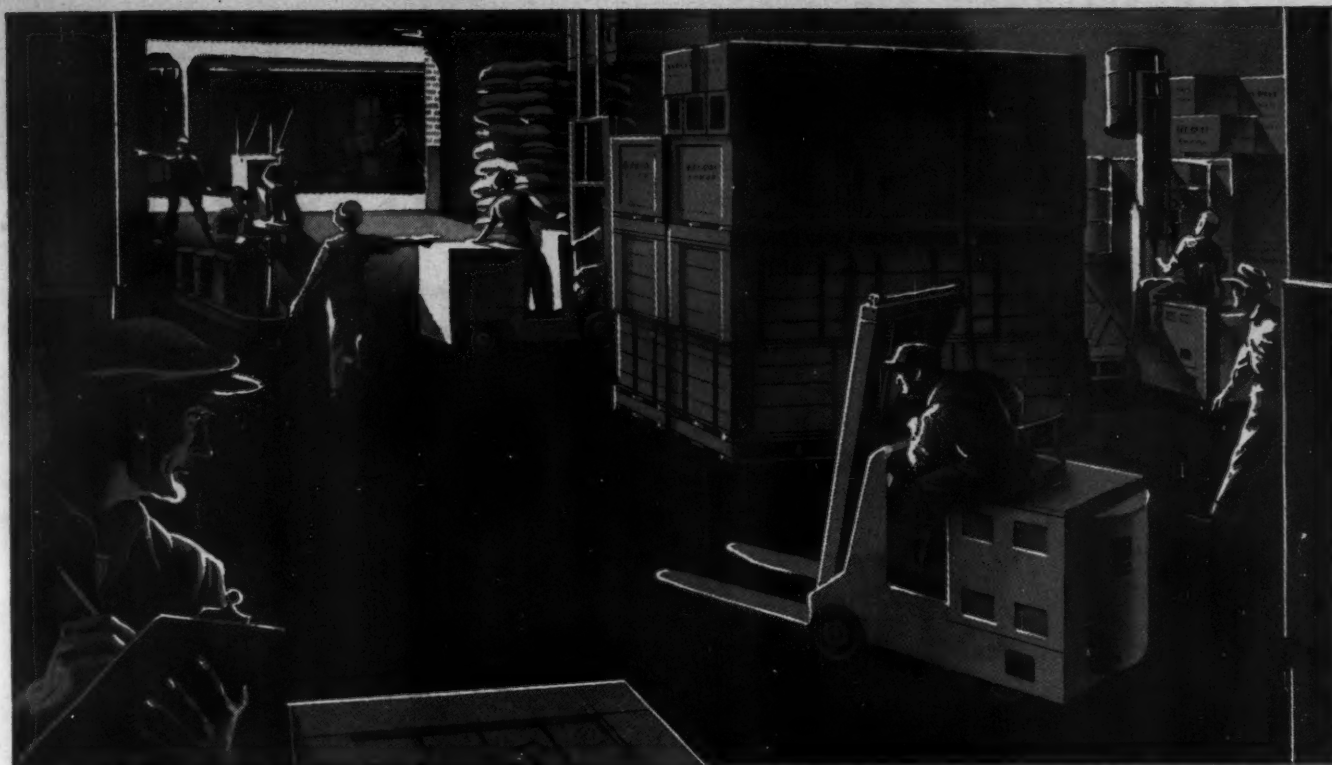
\*Patented

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## Industrial Materials Roll Smoothly and Economically on Mastic floors

The plant interior above is typical of many that are faced with the need for increased speed and efficiency in materials handling.

And one of its prominent characteristics is the Asphalt Mastic Floor made with Flintkote Flooring Emulsions.

Why is this floor surfacing so popular for warehouse installations? Well, look what it offers:

**SERVICE LIFE** is long and trouble-free. Mastic floors made with Flintkote Emulsions are *heavy-duty* in the real sense of the word. They take exceptionally heavy point and moving loads. They provide a lasting smooth surface for material handling equipment. They're self-healing of minor scars.

**MAINTENANCE** is minimized. Because these floors are so tough, repairs are infrequent. Yet when patching is necessary, the job is quick. And the smooth, unbroken surface is easy to keep clean and free from debris.

**INSTALLATION** is fast, easy and inexpensive. This mastic surfacing can be laid cold over almost any clean, firm sub-floor. This plus easy leveling and quick setting means either new installations or re-flooring go down in record time . . . with the area closed to traffic for as little as 24 hours.

And because of their unusually high capacity to absorb shock, mastic floors are especially satisfactory in multi-story installations. Then, too, the resilient surface is *much* quieter,

feels warmer and will not dust under even the roughest use. All of which gives you a pleasanter, more comfortable surface on which to walk and work.

Add these advantages together, and the sum total is a floor that helps you handle materials more easily, and more economically. Get complete information on Flintkote Flooring Emulsions, and how Mastic Floors can help you. Specifications for mixing and installing are yours for the asking. Write today.

### THE FLINTKOTE COMPANY *Industrial Products Division*

30 Rockefeller Plaza, New York 20, N. Y.

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## FLINTKOTE *Products for Industry*



Some of the Many Installations of

# POWERS

IN CONTEMPORARY ELEMENTARY SCHOOLS

*Pneumatic*  
Temperature Control

Assures Utmost Comfort and Efficiency  
of Teachers and Pupils

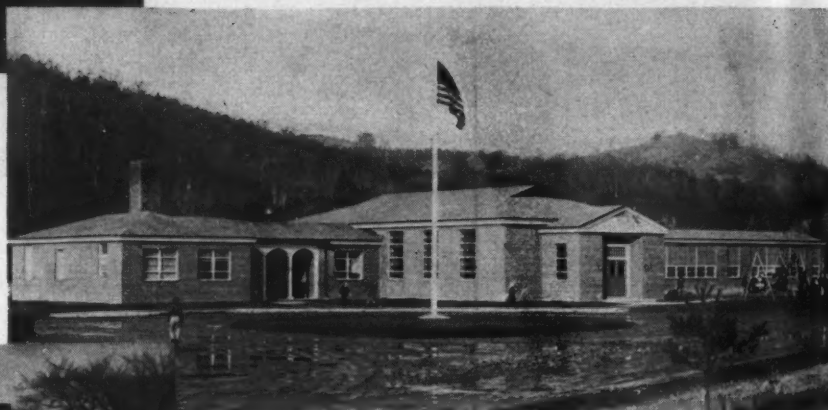
Lower Maintenance—Bigger Fuel Savings

Many 25 to 40 year old installations  
still giving dependable regulation

... these and many other plus values in  
POWERS systems of temperature control  
give users more for their money



Above: Greenbriar School, Northbrook, Ill.  
Architects-Engineers: Perkins & Will, Chicago—  
Mechanical Engineer: E. R. Gritschke—Heating Con-  
tractor: Northern Plumbing & Heating Co., Chicago

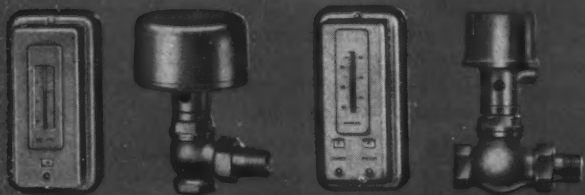


Right: Elm Hill School, Springfield, Vt.  
Architect: Richard D. Butterfield, Perkinsville, Vt.—  
Engineer: Thomas Tash, Hanover, N. H.—Heating  
Contractor: Dezero & Randall, Rutland, Vt.

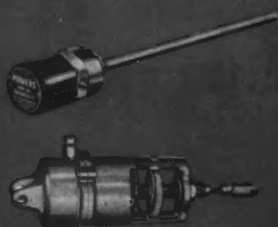


Left: Elementary School and Shop Bldg., Brewer, Me.  
Architect & Engineer: Alonzo J. Harriman, Auburn, Me.  
—Heating Contractor: C. H. Babb & Co., Bangor, Me.

Below: North Norwood School, Norwood, Ohio.  
Architect: Charles F. Cellarius, Cincinnati, Ohio—Engi-  
neers: Fosdick & Hilmer, Cincinnati, Ohio—Heating  
Contractor: B. & J. Jacobs Co.



MODERN CONTROLS FOR ALL TYPES  
OF HEATING AND AIR CONDITIONING



THE

Established

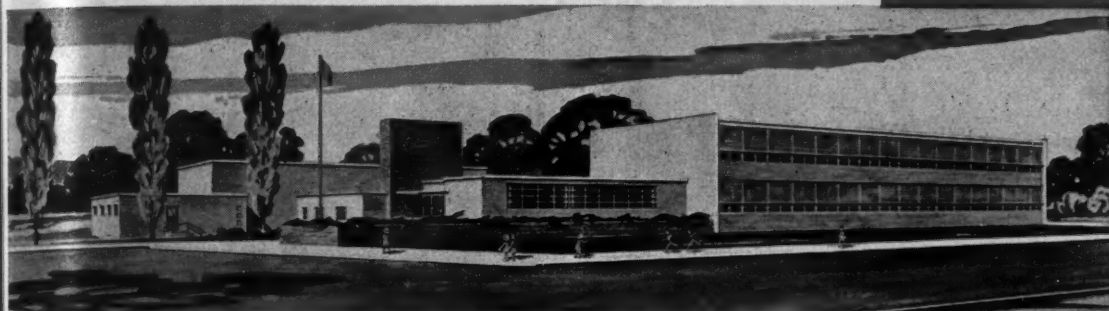
CHICAGO 14, ILL.  
LOS ANGELES 5



Above: Carle Place Elementary School, North Hempstead, L. I., N. Y.

Architects:  
Knappe and Johnson  
Engineer: Albert Fentzloff  
New York City  
Heating Contractor:  
Caruso-Sturcey Corp.  
Mt. Vernon, N. Y.

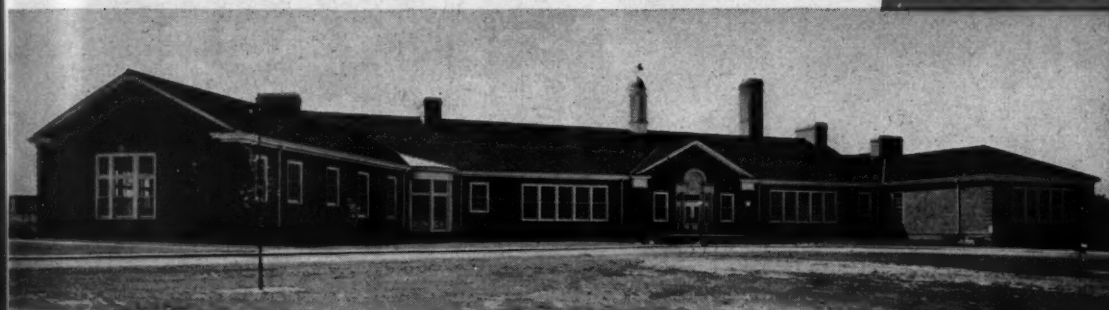
**POWERS**



Above: Porter School, Prairie Village, Johnson County, Kans.

Architects & Engineers:  
Thomas W. Williamson,  
Victor H. Loebbeck & As-  
sociates, Topeka, Kansas—  
Heating Contractor:  
U. S. Engineering Co.,  
Kansas City, Mo.

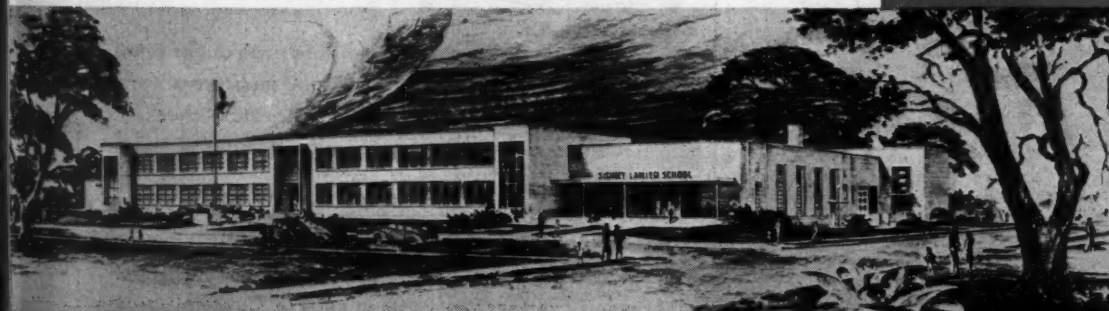
**POWERS**



Above: Conway School, Ladue, St. Louis County, Mo.

Architects: William B. Ittner,  
Inc., St. Louis, Mo.—Heat-  
ing Contractor: Gildehaus  
Plumbing & Heating Co.  
St. Louis, Mo.

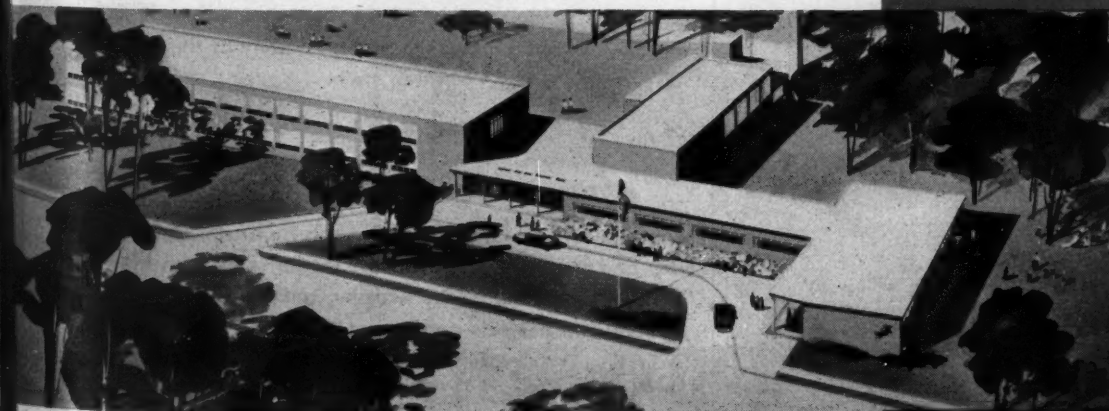
**POWERS**



Above: Sidney Lanier School, Dallas, Texas.

Architects: John B. Danna &  
Everett V. Welch & Mark  
Lemmon, Dallas, Tex.—Con-  
sulting Engineer: Zumwalt  
& Vinther, Dallas, Tex.—  
Heating Contractor: Kieffer  
Plumbing and Heating Co.

**POWERS**



Left: Jefferson  
Elementary School  
Wyandotte, Mich.  
Architects & Engineers:  
Smith, Hinchman & Grylls,  
Inc., Detroit, Mich.—Heat-  
ing Contractor: Peter Eddy  
Co., Detroit, Mich.

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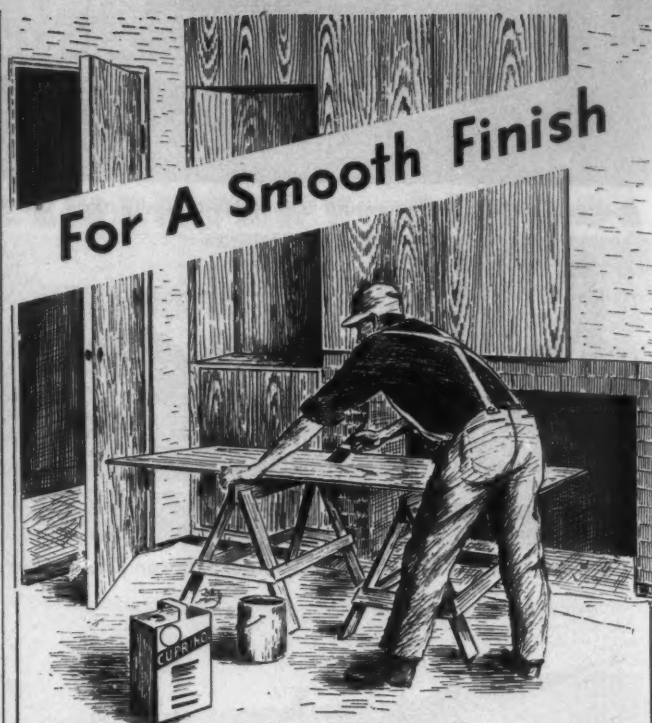


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For A Smooth Finish

## Treat Plywood With

# CUPRINOL®

You know how wood absorbs moisture even under paint, varnish or stain, and in plywood it is this moisture absorption that causes grain raising and separation checks to spoil the smooth finish that a good job demands.

### Cuprinol is Water Repellent

Treat plywood with "Clear Cuprinol" to protect against this moisture absorption, for Cuprinol is a water repellent wood preservative. After a coat of Cuprinol, grain raising and separation checks will be minimized, and prominent grain patterns subdued, so that paint will lie evenly and smooth and the natural beauty of the wood be retained under varnish or stain.

*Specify one coat of "Clear Cuprinol" on all plywood for interior or exterior use before applying paint, varnish or stain.*

Cuprinol is easily applied on-the-job by brush, spray or dip and is completely harmless to the skin when handling. It also reduces the warping and swelling of any lumber and protects against rot and insect attack. It is widely sold through lumber yards and building supply dealers.

See Sweet's Architectural File 5d/Cu or write for information on types of Cuprinol for specific use.

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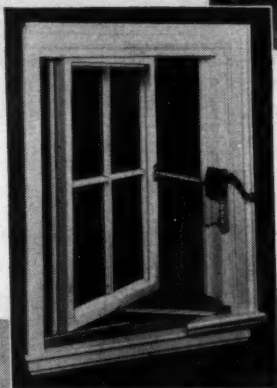
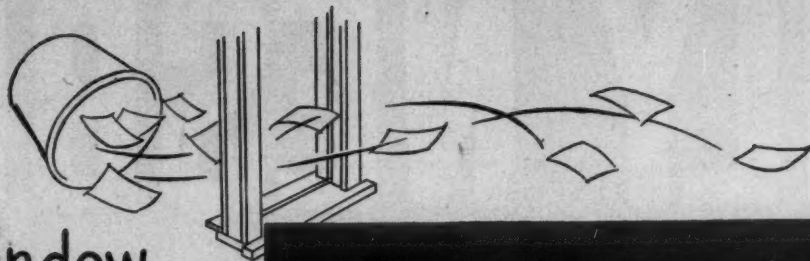
ARCHITECTURAL RECORD

FEBRUARY

## Out the window went all existing ideas!

"Throw away all existing ideas about casements. Start from scratch and develop a unit that is better than anything else on the market."

That was the order we gave our engineers and research men. The result: the Curtis Silentite Casement. Here's why we believe no other casement can match it:

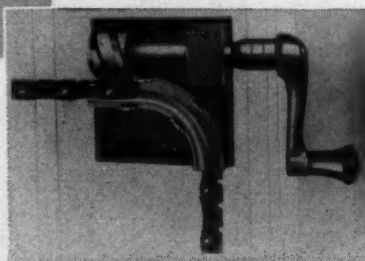


● **A COMPLETE UNIT**—with all parts pre-fitted—consisting of frame, sash, all operating hardware, insulating glass, screen and Miterite trim. The illustration shows small unit with part of trim cut away to show how operating mechanism holds sash firmly in any position without rattling, swinging or vibrating.

● **MORE WEATHERTIGHT**—repeated tests show that Silentite wood casements cut total heating costs in a house about 16%—thanks to scientific weatherstripping and insulating glass, which serve as storm sash.

● **EASY OPERATION**—this special Curtis hardware provides 15 times the operating force available with the ordinary lever-type casement sash adjuster. There is no hardware on outside of frame or sash when casement is closed and the minimum of exposed hardware inside. Adjuster is removable.

● **PLUS**—Toxic water repellent treatment of all wood parts—reduced condensation—no sticking, binding or warping—quick, easy installation.



Curtis makes a complete line of  
woodwork for homes of all types and  
sizes. Make your next house "all Curtis."



### Mail the coupon for full information

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Gentlemen: I want to know more about Curtis Silentite casements, basement units and Silentite double hung windows.

Name.....

Address.....

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# ONLY NESBITT

*gives you*

## Wind-o-line Radiation



The illustrations show Wind-o-line installed as a part of The Nesbitt Package at the Thomas Williams School, Wyncote, Pa. The enlarged section below shows the grilled Wind-o-line channel and finned-tube radiation which extend from both sides of the Syncretizer unit ventilator for the full length of the window area.

See The Nesbitt Package at the  
A.A. of S.A. Convention, Atlantic City,  
February 17-22, Booths G45-7-9.

**An Extra  
Thermal Blanket  
WHERE NEEDED**

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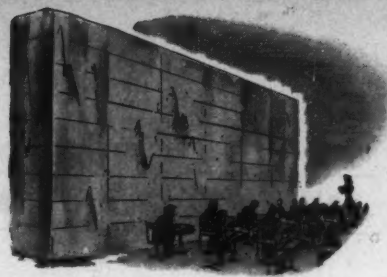
## Answers the "WALL-OF-ICE" Problem

THE trend toward larger areas of fenestration in the modern schoolroom makes greater demands of the heating and ventilating unit. The "thermal blanket" provided by the Nesbitt Syncretizer adequately shields occupants against the window "wall-of-ice" in normal situations; but under conditions of extremely long glass exposure and very low outdoor temperatures, an "extra blanket" is called for. Nesbitt WIND•O•LINE meets such needs.

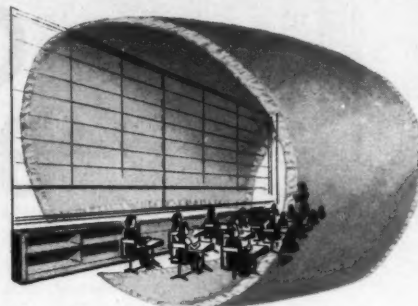
When specified as an auxiliary of the free-standing Nesbitt Syncretizer, WIND•O•LINE consists of finned-tube radiation in an attractive grilled casing. It is located just below the windows and extends from both ends of the Syncretizer unit ventilator, for the full length of the sill. It is controlled in cycle with the Syncretizer to give heat—when required—where heat is needed.

WIND•O•LINE is also available (as pictured below) as a component of The Nesbitt Package, recessed in a channel at the rear of the storage units. WIND•O•LINE is yet another Nesbitt innovation which permits more of America's schools to enjoy the *new standard of classroom comfort*.

MADE AND SOLD BY JOHN J. NESBITT, INC. PHILADELPHIA 36, PA., SOLD ALSO BY AMERICAN BLOWER CORPORATION



In sub-freezing weather, window areas become like a "wall-of-ice".



The Nesbitt Thermal Blanket protects occupants from cold windows.

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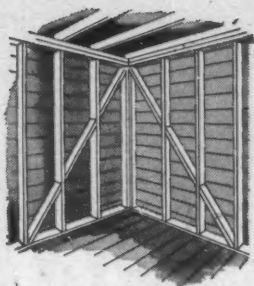
—You mean there's just enough heat here to take the chill off the windows on real cold days?

That's right, Joan, it puts an 'extra' blanket of heat between us and the cold 'wall of ice'.

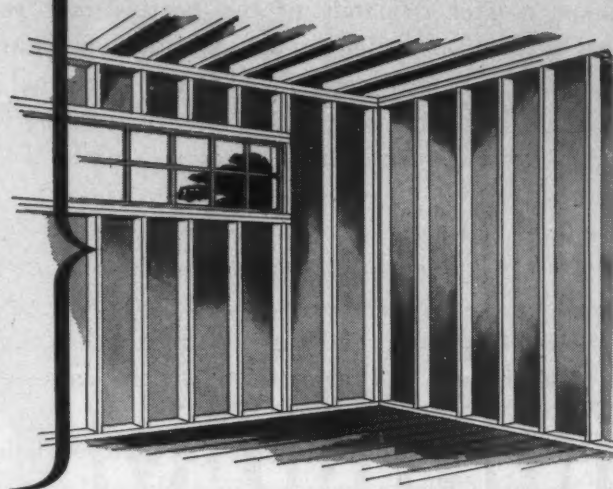




## ANOTHER ADVANTAGE OF BUILDING WITH HOMASOTE...



# WITH NO CORNER BRACING



... Homasote greatly exceeds F.H.A. strength requirements.  
... surpasses corner-braced, horizontal wood sheathing

STANDS UP UNDER  
HURRICANES,  
TORNADOES, TWISTERS

SINCE 1937, Homasote has been eligible for F.H.A. Mortgage Insurance—with *no corner bracing*—as used in Precision-Built Construction. The F.H.A. standards require bracing strength equal to horizontal wood sheathing *with corner bracing*. Racking tests—by an independent laboratory—showed that Homasote, without corner bracing, has a 150% margin of safety at 1200 lbs. and a 300% margin at 2400 lbs. over these requirements. Many another test has repeatedly shown Homasote to be the strongest insulating and building board on the market.

*No corner bracing is required when Homasote—in 4' widths or in greater widths up to 14'—is used on jobs under F.H.A. supervision.*

Homasote is weatherproof—tested for more than 30 years under every weather condition—from the tropical to the antarctic. With its unusually low moisture absorption, low air infiltration and high resistance to water-permeability, Homasote provides the maximum in lasting insulation values and full protection against dampness.

Homasote's Big Sheets require only one third as many nails as do 4' materials. With this lower application cost and the additional savings through the elimination of corner bracing, architects and builders can safely specify Homasote sheathing for the strongest house at the lowest cost.

HOMASOTE COMPANY, Trenton 3, N. J.

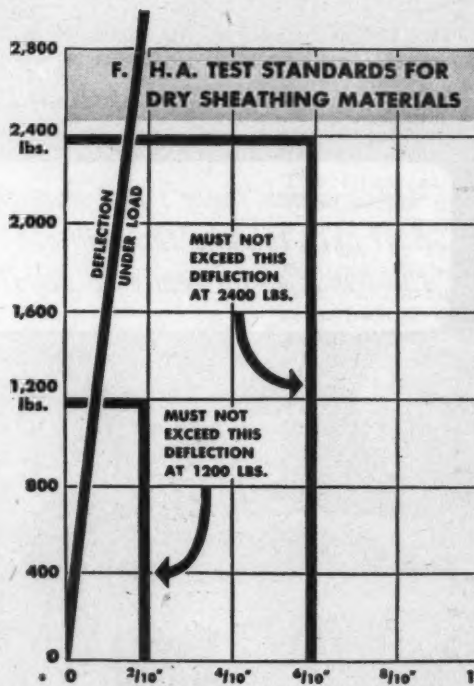


... in Big Sheets up to 8' x 14'



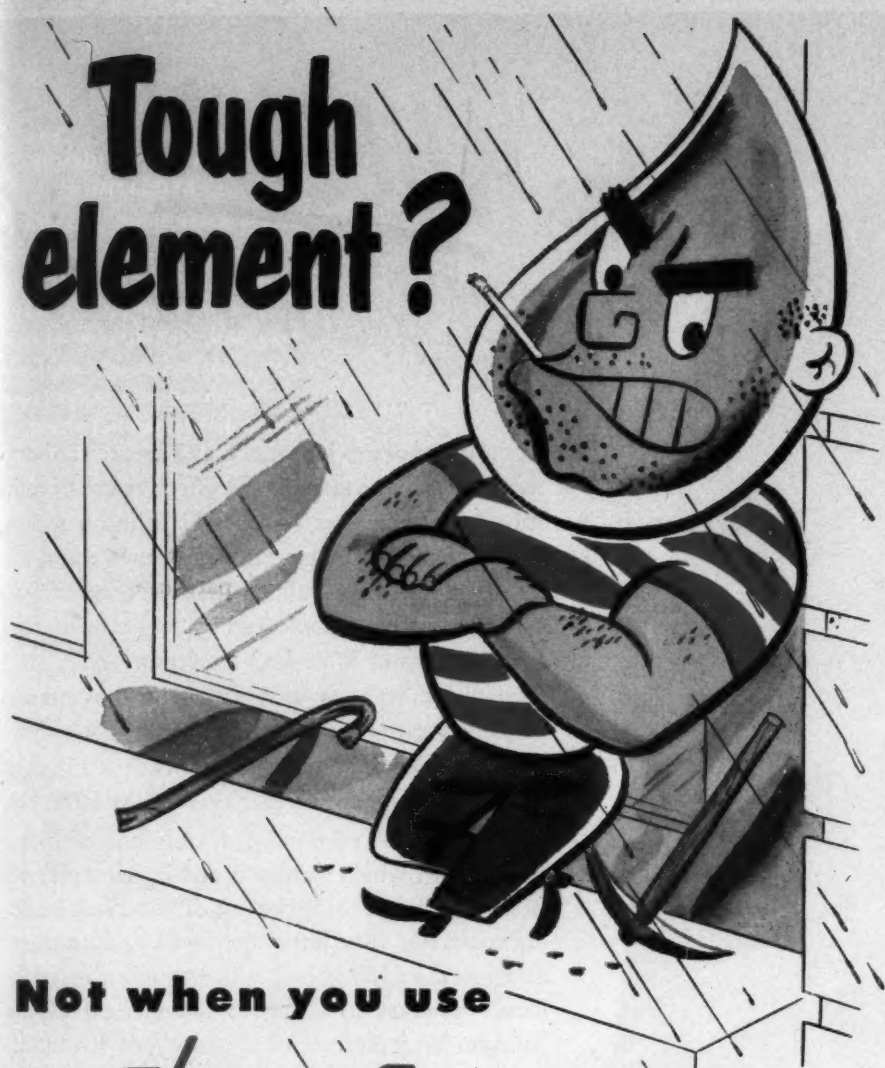
... Oldest and strongest insulating and building board on the market

Nova Sales Co.—a wholly-owned Homasote subsidiary—distributes the Nova Roller Door, Nova-I. P. C. Waterproofing Products, the Nova Shingle and Nova-Speed Shingling Clip and the Nova Loc-Nail. Write for literature.



THIS CHART shows the results of racking tests made by an independent laboratory, using 8' x 8' Homasote sheathing on standard wall framing *without corner bracing*. At 1200 lbs. pressure, deflection could not exceed 2/10 inch; at 2400 lbs. pressure, 6/10 inch. ... The diagonal line shows that Homasote *without corner bracing* had a margin of safety of 150% at 1200 lbs. and 300% at 2400 lbs.

# Tough element?



Not when you use

## Chrome Lock glazed sash!

**MOISTURE, SUN, COLD AND WIND**—tough elements for many glazing materials—have been proved completely harmless to Chrome Lock glazing tapes over the past ten years. This is because Chrome Lock's *impregnated felt* base provides a natural anti-aging factor.

Chrome Lock does not dry out or crack—remains soft and pliable. Excellent vibration cushioner as well as corrosion inhibitor.

Chrome Lock is ideally suited to all channel type window sash. It is easy to apply and its *permanent nature* eliminates periodic reglazing costs. Its availability is unlimited and its cost is always competitive.



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by  
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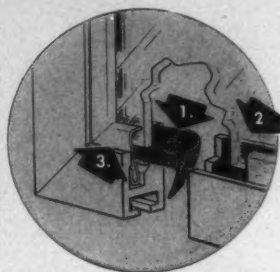
Chrome Lock's versatility may quickly solve a future sealing problem, or one you may now have. Samples and technical data will be sent immediately on receipt of the coupon at the right.

**SPRING PACKING CORPORATION**

332 SOUTH MICHIGAN AVENUE, CHICAGO 4, ILLINOIS

### CASE HISTORY NO. 4

**Chrome Lock Application on  
Kane Weathershield  
Metal Windows**



### SIMPLE APPLICATION DATA

1.  $1/32"$  x  $1/2"$  Chrome Lock tapes are stripped on sash.
2. Glass is now positioned.
3. Decorative moulding is pressed down into channel, locking light in sash.

### EXPERIENCE DATA

The Kane Manufacturing Co. of Kane, Pa. switched to Chrome Lock in preference to a rubber type material for four reasons: (1) Compressibility and pliability eliminated breakage of lights. (2) Adhesive back provided easier application. (3) Chrome Lock's laminating qualities permitted lapping at corners for perfect seal. (4) Lower material cost.

Chrome Lock is available in many sizes and it is easily adapted to any position. Thicknesses:  $1/64"$ ,  $1/32"$ ,  $1/16"$  (100' rolls);  $1/8"$  (50' rolls);  $1/4"$  (25' rolls). Any width from  $1/4"$  to 66".

### OTHER CHROME LOCK APPLICATIONS

#### METAL BUILDINGS

Inhibits electrolysis between dissimilar metals. Weatherseal for joints.

#### TUB SHOWERS

Between jamb and wall and tub top. Prevents seepage.

#### VENTILATION OUTLETS

Between outlet and wall. Prevents dust from discoloring wall.

#### SINKS

Under mouldings. Permanent, positive seal.

#### WATER PIPES

Pipes wrapped with Chrome Lock permanently prevent damage resulting from condensation dripping.

#### METAL FLASHINGS

Prevents moisture from penetrating between metal trim sections.

#### AIR CONDITIONING

On flange joints. Adhesive back speeds application.

**ATTACH THIS COUPON TO YOUR LETTERHEAD AND  
MAIL TODAY!**

Spring Packing Corporation  
332 South Michigan Avenue  
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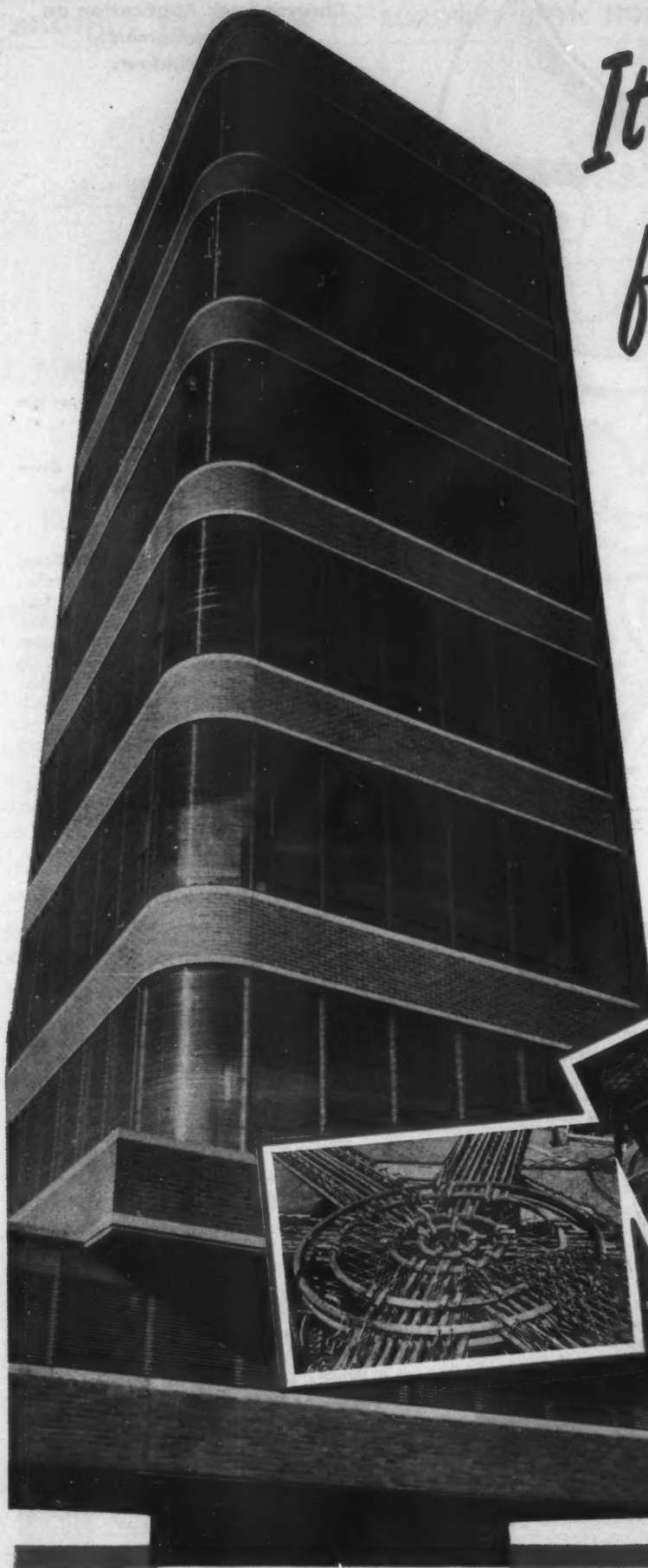
- \_\_\_\_\_ Please send me Architectural Data Sheet No. 151.  
\_\_\_\_\_ Please send me a free sample of Chrome Lock.  
\_\_\_\_\_ Have a representative call on me.

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_





# It's WHEELING for Johnson's Wax!

Completion of the Johnson Wax Research Laboratory marks a milestone in the effective use of reinforced concrete. Created for S. C. Johnson & Son, Inc. by famed architect Frank Lloyd Wright, the 154-foot tower and related structures used 6,960 yards of concrete, reinforced by 504 tons of bars and 542 tons of Wheeling Steelcrete—solid steel mesh made from  $\frac{3}{8}$ -inch plate, the heaviest expanded metal produced to date. In the four views below, Steelcrete and bars are seen as used in conjunction throughout various parts of the structure.

Steelcrete for reinforcing is only one of many products for which architects and builders rely on Wheeling. In the complete line of Wheeling building materials, they know they will find products that are the ideal solution to construction problems—whether in advanced design such as the Johnson Wax Research Laboratory, or for buildings of more conventional type.




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THE WHEELING LINE OF  
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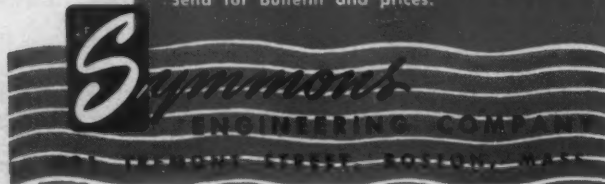
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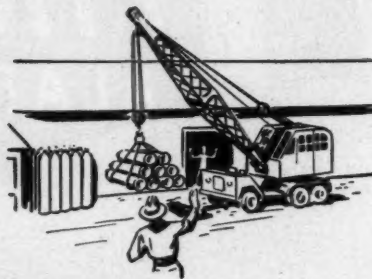
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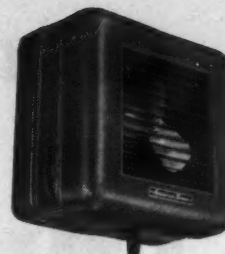
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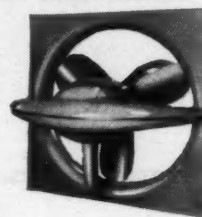
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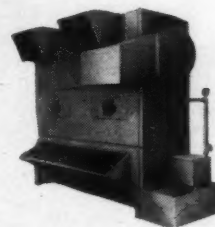
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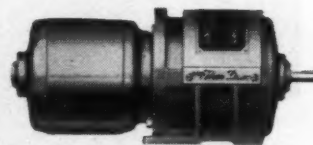
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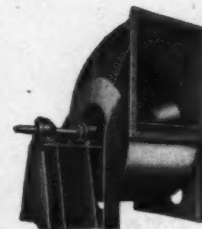
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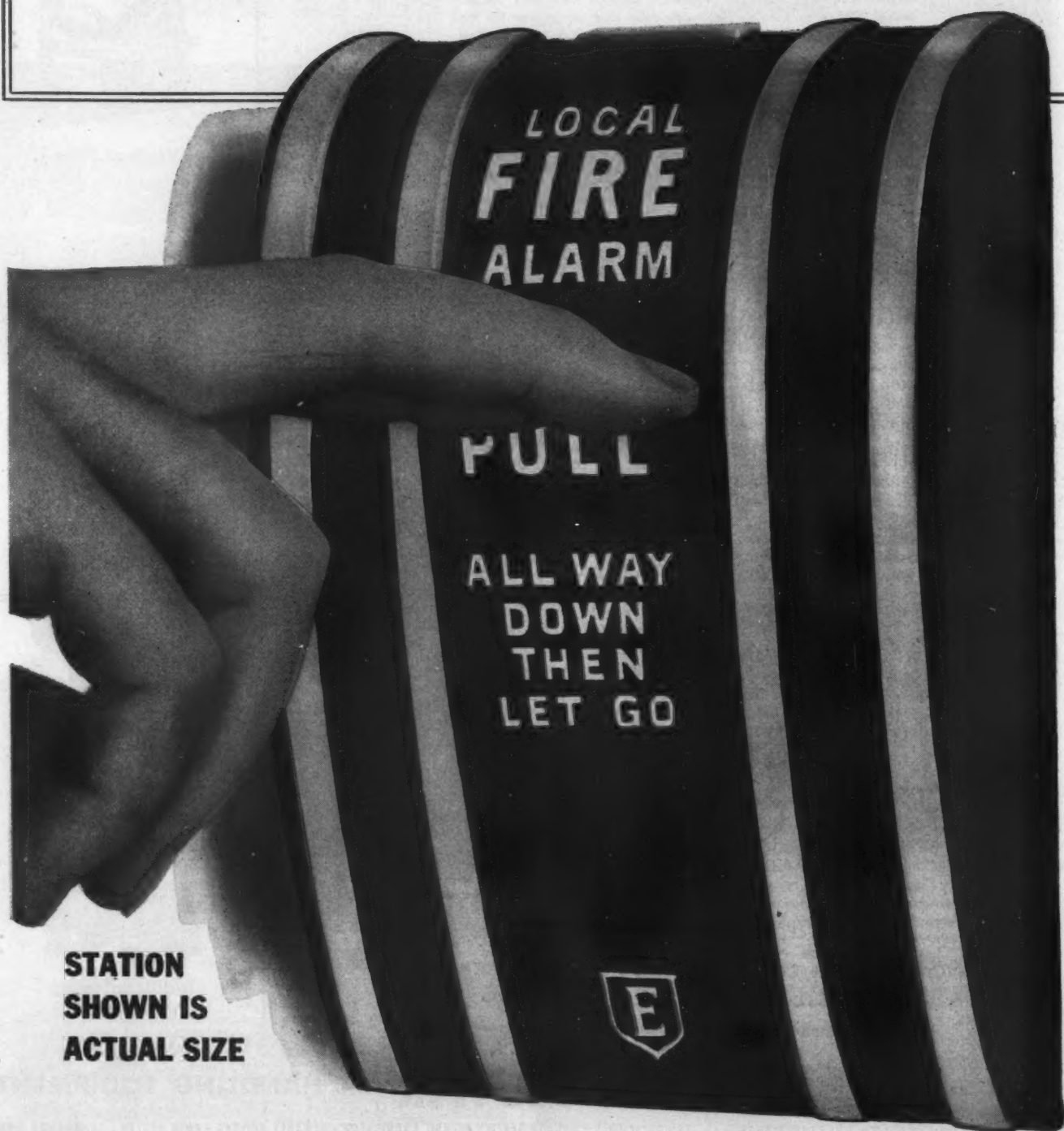


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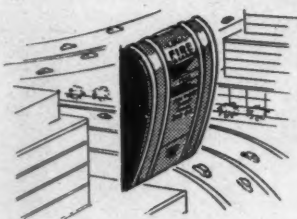
# Fire Alarm Station

*Important news for Architects!*

Take a good look at that "actual-size" picture on the facing page. Note the streamlined beauty in every line and detail...beauty worthy of modern developments in architectural design. Yes, the *really new* Edwards fire alarm station is utterly different in appearance from old-fashioned bulky, rough-finished cast iron stations. And it's *superlatively functional* in design, too—providing vastly improved operating efficiency and

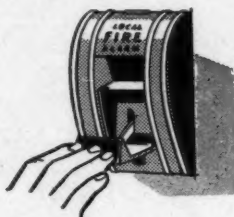
important installation economies. This *really new* Edwards station is the result of a careful survey and analysis of requirements among fire protection authorities, government experts, architects and electrical engineers. It is available in standard lustrous red enamel with highly polished bright metal trim as well as any desired color or finish. For complete details and specifications please mail coupon below.

## 1 Really NEW Streamlined Design



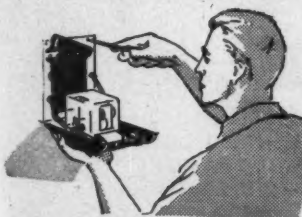
It's a smooth, gracefully contoured die-casting that literally "hugs" any wall. The lustrous twice-baked enamel surface—in keeping with modern architecture—is relieved with four highly polished metal bands. It's the smallest code station available today with a maximum projection of only 1 1/8" from the wall.

## 2 Really NEW Foolproof Operation



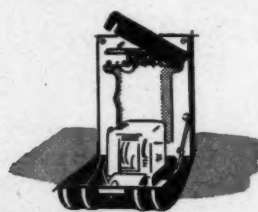
Streamlined simplicity of operation for maximum protection matches streamlined simplicity of design. One simple pull of the handle assures positive operation. Single action—only one motion is required. Thus, even in a Break Glass model, there's no chance of "operator failure" because of haste or panic.

## 3 Really NEW Installation Economy



The new Edwards station is quick and easy to install...cuts man-hour installation costs up to 30%...and that's good news for both contractors and architects. Unlike old-fashioned stations all new Edwards stations have terminal blocks that are front connected and are therefore readily and easily accessible.

## 4 Really NEW Ease of Testing



New hinged front drops down exposing visible mechanism in protective transparent plastic cover. All new Edwards stations can be tested for both silent and audible operation while front is down. No special keys are needed to open or test the station. In short, with Edwards' stations, testing is quick and easy.

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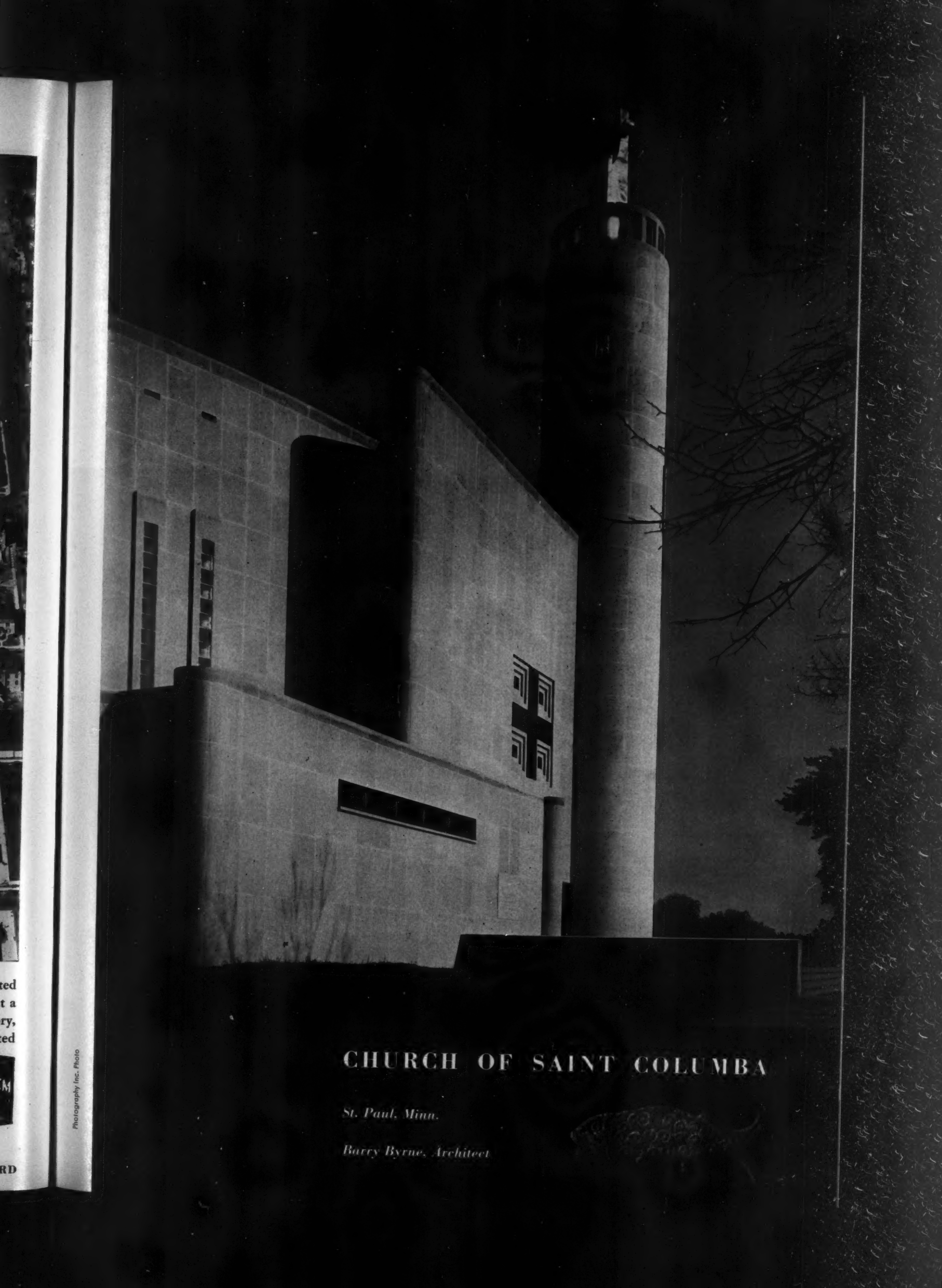
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**New Apartment Project Near East River**—This recently completed apartment project, located at 20th Ave. and 21st St., Astoria, New York City, is known as the Marine Terrace Apartments, and is but a stone's throw from New York City's busy East River. The Marine Terrace Apartments consist of 26 three-story, oil-heated buildings. These wing-type structures have facilities for 1338 families. The development is situated on 40 acres of ground, more than half of which are devoted to streets, playgrounds, and landscaped areas. Steelwork for the project consists of some 1750 tons of Bethlehem Structural Shapes. *Contractor:* River Heights Construction Corp., New York. *Architect:* Samuel Paul & Associates, Jamaica, N.Y. *Steel Fabricator and Erector:* Dreier Structural Steel Co., Inc., Long Island City, N.Y.





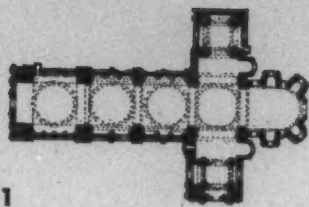
# CHURCH OF SAINT COLUMBA

*St. Paul, Minn.*

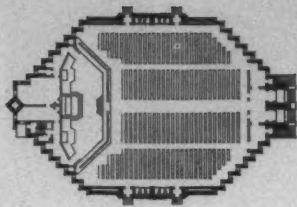
*Barry Byrne, Architect*

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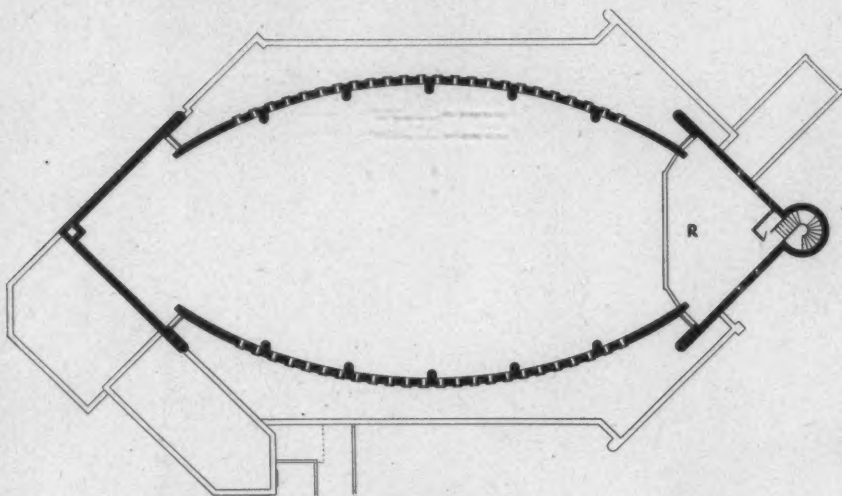
3

Iesos—Jesus  
Christos—Christ  
Theou—of God  
Uios—the Son  
Soter—Savior  
4

THE CHURCHES OF ST. COLUMBA, in St. Paul, and St. Francis Xavier, in Kansas City, have an almost identical and very evidently symbolic form. The shapes of these buildings, unfamiliar and hence likely topics for much discussion, evolved only after years of thoughtful consideration of the requirements truly fundamental to a Catholic church. The buildings' fish-like forms are not wholly incidental, but neither were they forced into this symbolic plan. To quote Mr. Barry Byrne:

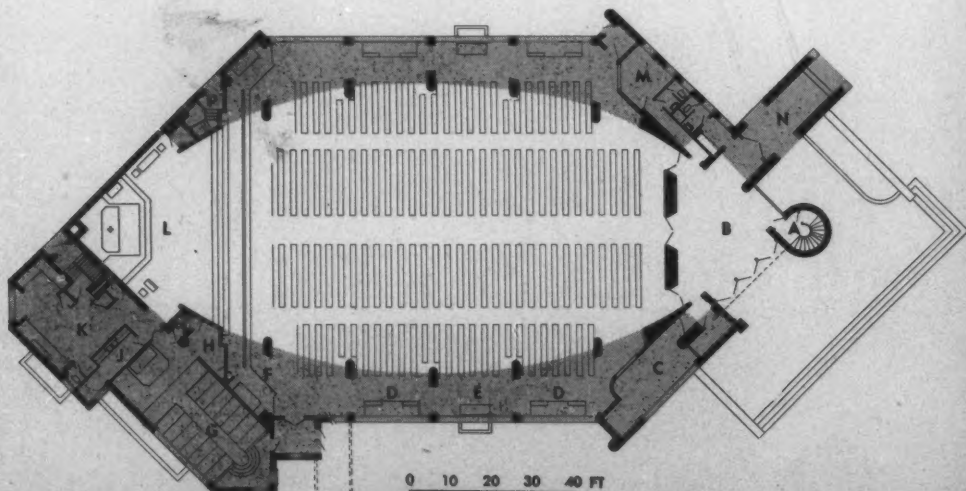
"In Catholicism there is a basic doctrinal factor, the Divinity of Christ, which admits of no equivocation. The continuation of the belief into time and material form may be said to occur in the Sacrament of the Eucharist, the consecration of bread and wine into the Body and Blood of Christ. This consecration is the basic element in the Mass and together with what surrounds it of prayer and action is a liturgy. The Eucharistic liturgy is the actual, *essential* form of worship in the

1, Angouleme Cathedral, built 1130 A.D. 2, Church of Christ the King, Cork, Eire, built in late 1920's; Barry Byrne, Architect, R. Boyd Barrett, Supervising Architect. 3, steel skeleton of Church of St. Francis Xavier, Kansas City; Barry Byrne, Architect. 4, the acrostic popular since Christianity's early days—a manifestation of the importance of the fish as a Christian symbol. 5, plans of St. Columba, which has masonry piers and curtain walls



Key to plans of St. Columba: A, Tower. B, Narthex. C, Baptistry. D, Confessional. E, Shrine. F, Side Altar. G, Lady Chapel. H, Organ Space. J, Altar Service Room. K, Minister's Sacristy. L, Sanctuary. M, Mothers' Room. N, Porch. P, Boiler Room. R, Choir Loft

5



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## ST. COLUMBA

Catholic church. No other form of worship approaches it in importance or challenges its preeminence.

"A Catholic church building, then, is primarily a space in which, first, the ministering priest can offer the Eucharistic liturgy; and second, the congregation can assemble and participate in this offering. A church structure has value insofar as it is harmonious with the idea of the Eucharistic liturgy, and to the degree it accentuates it and is favorable to the congregation's participation in it."

These requisites, inherent in Catholic church design, can be studied objectively, related to environmental habits and needs and to current structural and manufacturing technology. When all of these factors are conjoined they lead almost inevitably to building forms only spiritually and ideologically connected with the past, freed from past architectural forms as determining — or retarding — elements. Our current technical and

economic situations, acting in concert, have in a sense directed us into an architectural period which has much in common with the pre-Renaissance, when function of use and the nature of the structural system were the bases of architectural validity. Again architectural form is becoming a result, not a predetermination, influenced though that form may be by esthetic expression of, and imaginative developments around, use and structure.

The Church of Christ the King, built in Ireland from Mr. Barry Byrne's design in the 20's, was an attempt to create an interior space focused on the Eucharistic altar, which was twelve feet wide, and to unify with it in an orderly fashion the congregation seating area, ninety-seven feet wide. Proceeding from this example, efforts in the early '30's to refine the plan resulted in the fish shape. After the plan was evolved, its evident symbolism was exploited. The cruciform plan of pre-Renaissance Christian churches was appropriate both because the







The masonry pier structure is surfaced outside with Indiana limestone, inside with Winona stone and integrally colored plaster. Heat is supplied by radiant warm air floor panels



The walls, pierced by repetitive narrow openings glazed with glass block, curve not only to focus attention on the Sanctuary; they also shelter and unify the congregation. The flat ceiling suspended from steel roof deck construction, controls distribution of both light and sound

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Warren Reynolds — Photography Inc., Photos

shape was suited to the material and structural system employed and because the symbolism was apt. That day's technology did not permit wider spans, though of course side bays were added to many churches — which, incidentally, obscured the cross form. The fish, as the ancient Greek acrostic (ICTHOS), by its association with the miracle of the loaves and fishes and hence with the Eucharist, was a sign of Christian identity in the days of Roman persecution. It has its own symbolic Christian validity and some appropriateness in these times.

Both St. Columba and St. Francis Xavier thus have symbolic aptness. Structurally, we can today build, within reason, whatever shape and size we wish, employing many different materials; suitability to its purpose, rather than the limitations of the building material, delimit the design of a building. Superficial characteristics — the rounding of this surface or the detailed handling of that entrance — may please some or offend others; the fundamental architectural approach is the important thing.





# CHURCH OF ST. FRANCIS XAVIER

*Kansas City, Missouri*

*Barry Byrne, Architect*

*Joseph B. Shaughnessy, Associate Architect*

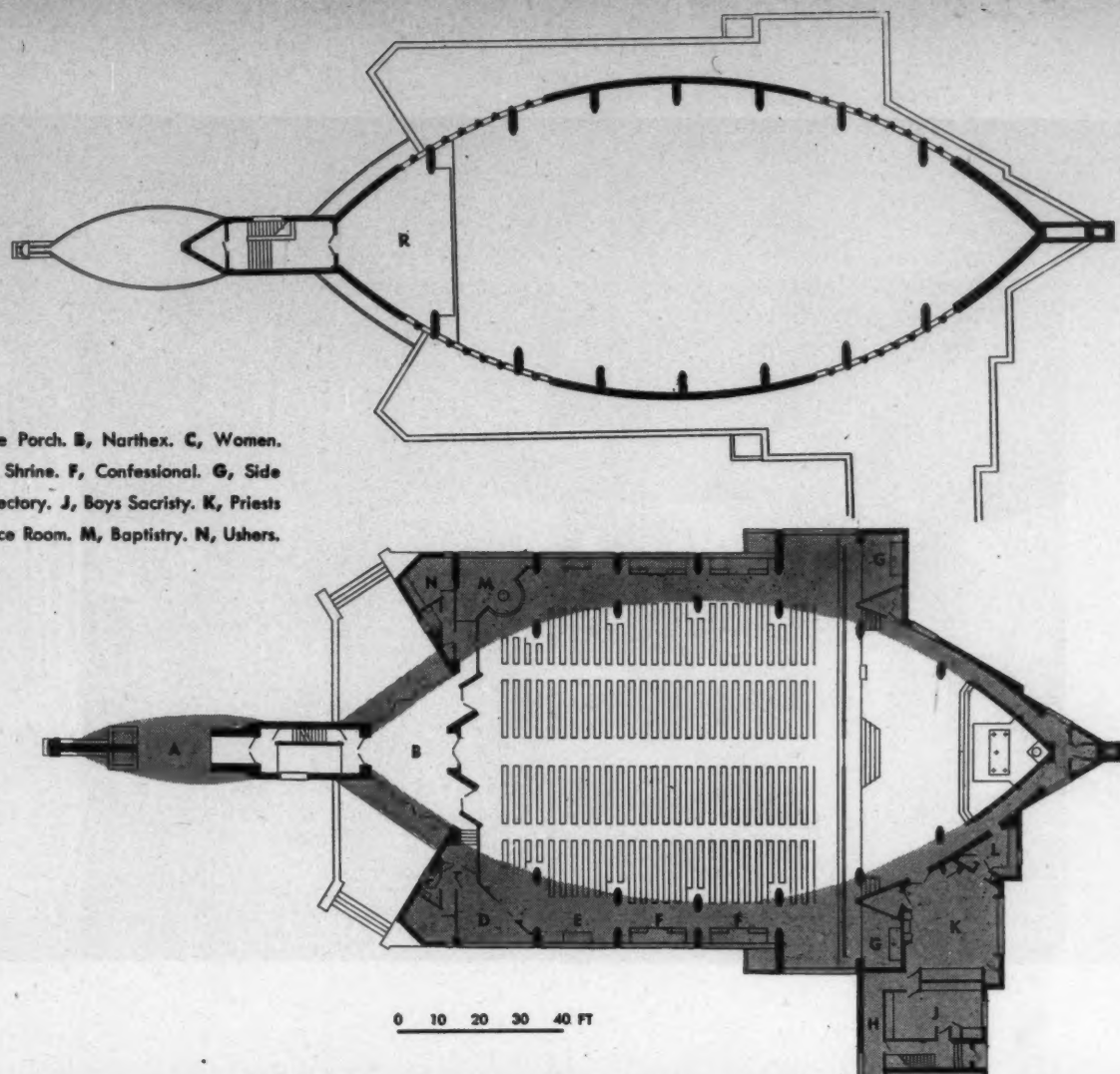
*Alfonso Ianelli, Collaborating Artist*

D. Jones Photos



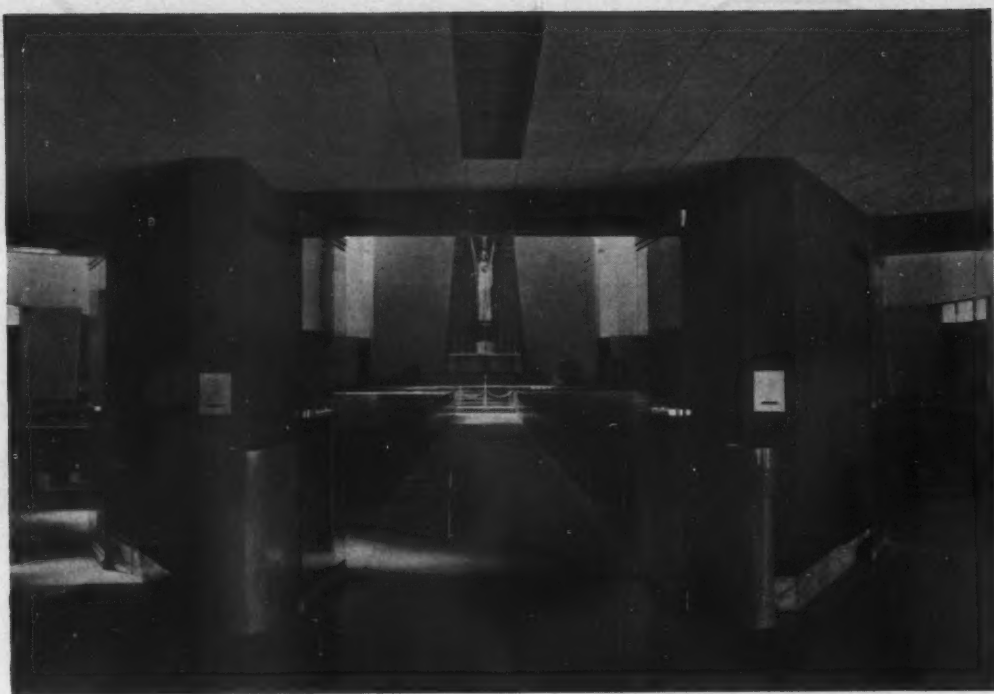
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Key to plans: A, Drive Porch. B, Narthex. C, Women.  
D, Mothers' Room. E, Shrine. F, Confessional. G, Side  
Altar. H, Passage to Rectory. J, Boys Sacristy. K, Priests  
Sacristy. L, Altar Service Room. M, Baptistry. N, Ushers.  
R, Choir Loft





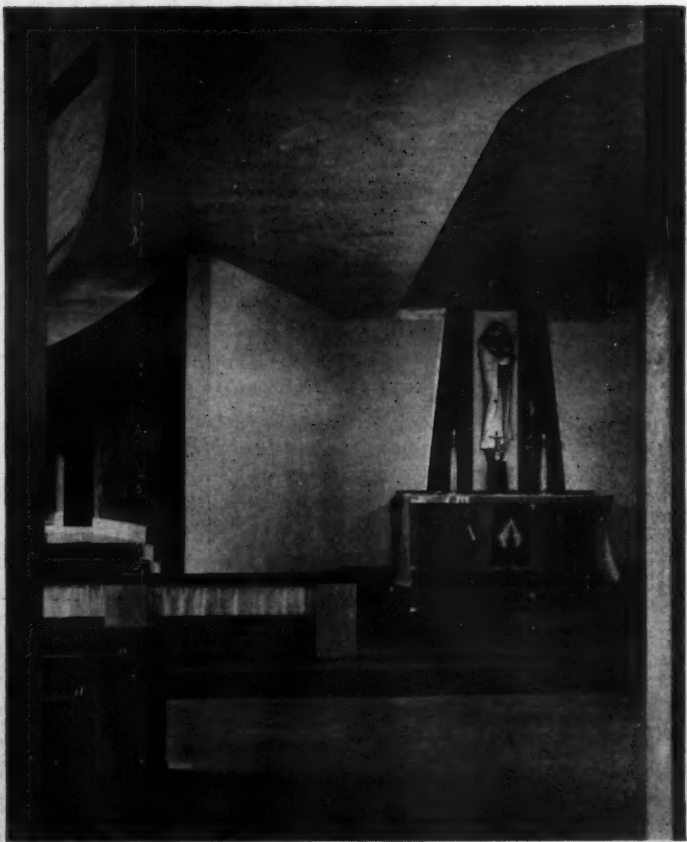
# ST. FRANCIS XAVIER



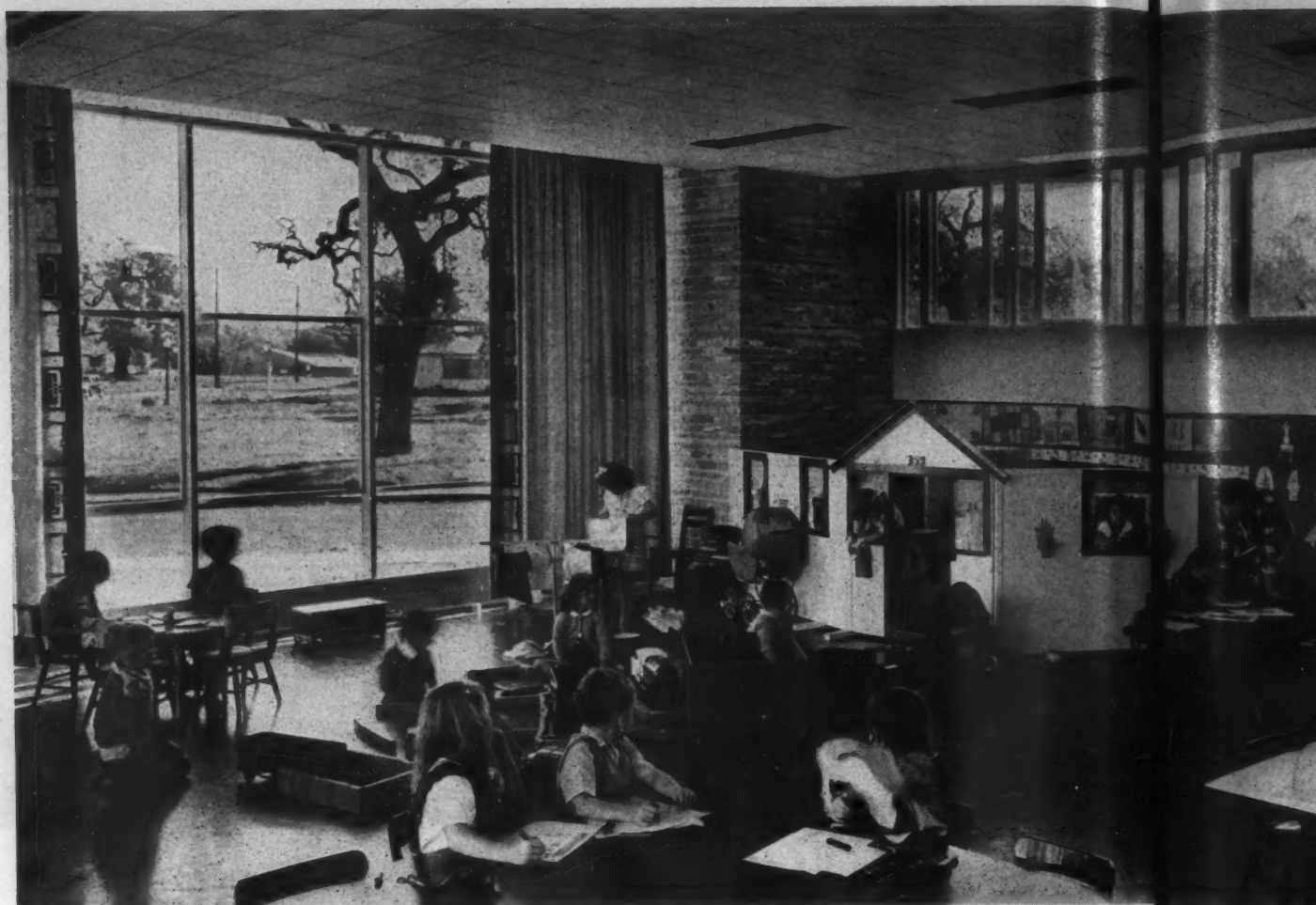
L. D. Jones Photos

St. Francis Xavier, like St. Columba, has a fish-shaped plan, a nearly flat roof and level ceiling, and radiant warm air floor heating. Unlike St. Columba, St. Francis is steel-framed. Exterior walls are surfaced with Indiana limestone, interior with integrally colored plaster. Photographs show, above, nave and altar seen from Narthex; top of facing page, entrance and (right) rectory. Photographs at right show the two side altars flanking the sanctuary









## THE PRE-SCHOOL IN ACTION

by Heinrich H. Waechter, A.I.A., and Elisabeth Waechter

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*The Editors here present a condensation of part of "Schools for The Very Young," the first ARCHITECTURAL RECORD book to be published in 1951. The authors, a husband and wife team of architect and child educator, have drawn on their wide experience in Europe and the United States to provide an authoritative book on the requirements of pre-schools. Mr. Waechter is currently Associate Professor of Architecture at the School of Architecture and Allied Arts, University of Oregon.*

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**I**N this time of professional specialization, one of the most difficult tasks of the architect is to coordinate all the information disseminated by the different technical and scientific consultants. This holds true not only with regard to fields immediately related to architecture — as structural design, use of materials, and

mechanical equipment — but also to information coming from psychologists, sociologists, economists and many other specialists. The designer has to understand and evaluate this information, because only he is trained to fuse it and derive from it a properly balanced architectural conception, and only he can keep each special element of the whole mass of considerations in its correct relation to all the others. To an understanding of the educational theories basic to the pre-school problem, which enables him to appreciate the needs of the educator, the architect needs to add familiarity with the practical aspects of pre-school operation through direct observation. Just as the architect for a given type of factory visits and inspects factories of a similar kind, so the school architect needs to visit school buildings and observe them while classes are in progress. Thus he can see and experience for himself the great difference between the building as a structural entity of more or less formal beauty and the building as it comes to life through its use. We have often experienced the miracle

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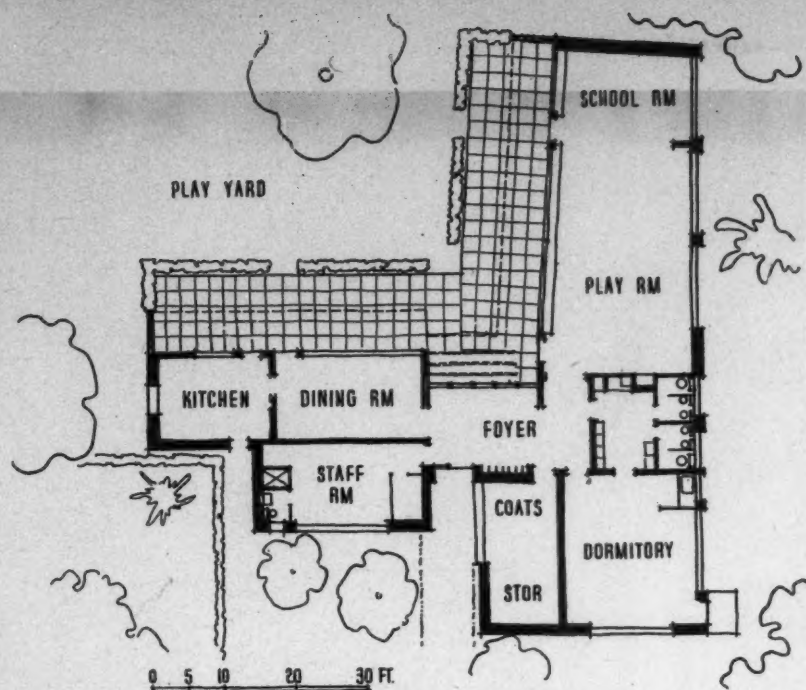
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Philip Fein Photo



Robert L. Perry Photo



Well designed nursery schools correlate space and equipment requirements for play and routine activities, both in and out of doors. Left: Kindergarten play room, White Oaks School, San Carlos, Calif., Ernest J. Kump Co., Architects. Right: Exterior and plan New London Day Nursery, New London, Conn., Grieshaber & Neilan, Architects

of life in a nursery school or kindergarten as it is transformed by the presence of eager and active little children and devoted teachers. It cannot be described or transmitted by words. It has to become a sensory experience of the individual concerned.

We can, however, point to the outward occurrences of the nursery school day, without attempting here to describe all the possible differences between the nursery school and the kindergarten which arise from the different age levels of the children attending. There is a rich literature in the field of educating the small child which is available to those who wish to make further detailed study, and we have listed a few titles at the end, chosen from the bibliography in our book.

#### Programs and Schedules

Under the Froebel method, a program can be considered a pattern which is carried on through the entire day. However, a program can also mean quite simply the teacher's plan for the possible activities during

the day, with no attempt to interlock one activity with another. Such a program is expressed by a schedule which includes not only the different play periods, but also lists the periods reserved for the routine activities, like eating, sleeping, toileting, etc. The schedule has been termed the "hooks on which to hang the day." But we are also warned that the schedule should be flexible and designed to give as much leeway as the group needs and the school can manage.

Many kinds of schedules have been published. The designer will have to make himself familiar with the special conditions of his own project. He should also seek to understand the educational trends that may be involved. He should discuss with his client the possible future development of the school in order to provide for foreseeable changes in the use of the building. An approximate idea of current practice may be gained from the following example of a schedule for an older group in a nursery school as suggested by the Institute of Child Welfare at the University of Minnesota.



## PRE-SCHOOLS



"Free Play" periods where children work alone or in groups require large well lighted rooms, as in examples shown above. Left: Clyde L. Lyon School, Glenview, Ill., Perkins and Will, Architects. Right: Crow Island School, Winnetka, Ill., Eliel & Eero Saarinen; Perkins, Wheeler & Will, Architects

8:45 — 9:15 A.M.	Arrival of children. Inspection by nurse. Outdoor play
9:15 — 9:30	Remove wraps. Serve fruit juice
9:30 — 10:30	Work period
10:30 — 11:00	Group activities. Conversation. Music. Games
11:00 — 11:15	Washing. Look at books
11:15 — 11:30	Story
11:30 — 11:45	Rest. Set lunch tables
11:45	Lunch
12:15 — 1:15 P.M.	Wraps. Outdoor play
1:15 — 1:30	Remove wraps. Preparation for nap
1:30	Nap
2:30	Crackers and milk. Play — indoors and outdoors. Wraps
3:45	Leave for home

The schedule for two-year-olds requires more time divisions because of greater need for supervised physical care, shorter attention spans, and quicker fatigue points. The more the toilet habits become well established with increasing age, the less mass toileting should be necessary, since it interferes with the children's play interest.

Most educators agree that a schedule is helpful or

even necessary. However, there is much cautiousness of attitude toward the question "Shall the schedule dominate?" There are two principal schools of thought. In the first, we find that a fixed schedule is to be carried out and the teacher's main interest is to accomplish this routine. In the second case, careful thought has been given to the preparation of the program but in carrying it out more consideration is given to the immediate needs of the children. The teacher's task is to make materials and experiences available. The younger the child, the more flexible the program should be: older children enjoy organized play.

### Play and Other Activities

The architect who spends some time in a pre-school observing the events of the day cannot help noticing to what degree the different activities demand space and equipment. Program and schedule will be considered carefully, but their application will not be rigid. There is today no fixed pattern of tasks for all children at the same time. Free play periods, in which the children go about separate activities, alternate with group activities in which all participate.

When the child arrives at the nursery school he goes to the locker room, takes off his wraps, and puts them

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Hedrich-Blessing Photos

in his own locker which he recognizes by color or picture symbol. Before he joins the group, the morning inspection of his person is done by a nurse or a teacher trained in health inspection. The purpose of this brief inspection is to detect any signs of contagious disease. In order to facilitate efficient inspection, an examination room will be found in many schools. In some of them the process takes place in an area adjacent to the medical room where the visiting physician examines the children periodically. After inspection, children can go to the toilet if they wish.

The morning hours are scheduled for play indoors, or sometimes outside when the weather is favorable. This period is usually called a "free play period." When school starts, preparation for this period has already been completed by the teacher, with the equipment and play material so arranged that activity is suggested. In all groups, the arrangement provides for group play as well as for solitary play. A child can, at any time, join others in social play or he may retire to a quiet corner and busy himself with something of his own interest.

The activities may vary in many ways; too many to be accounted for here. For instance, the child "may make an airplane at the work bench, move on to the housekeeping corner where he is daddy for seven min-



Photof rom "Public Housing Design"

Outdoor play facilities should include equipment that is instructive as well as body-building. Above: Play sculpture, Langston Terrace, U.S.P.H.A. Housing, Washington, D. C. Below: Playground, New London Day Nursery, New London, Conn. Bottom: Pet house, Green Acres Day School, Waltham, Mass.

Robert L. Perry Photo



Alston Studios, Inc., Photo



## PRE-SCHOOLS



Julius Shulman Photo

utes, then paint three pictures at the easel, after which he may string wooden beads and then, with his beads around his neck, go to the block area and help four other children who are making a train. . . . Some schools have an organized period for group participation in music, stories, poems, and perhaps sharing of news by the children. When such a period is on the regular schedule, it usually lasts approximately fifteen minutes. For children under four, such participation is often optional. For the older ones some schools consider it desirable to expect a child to feel that he is an integral part of a social group." \*

The activities of the two- to three-year-olds will be much simpler than those of the older children. They like to use crayons, pegs, balls, etc. With increasing age, puzzles and blocks become more popular.

Nature studies and water play are other important activities. Flowers in pots or vases, animals in a terrarium, or fish in an aquarium will be observed with absorbing interest. A sink which is large and low enough will be used as a basin for play with water and for floating toy boats or animals. Outdoor facilities are of major importance for certain activities, such as caring for pets or flower beds and using the spray pool.

One important field for the child's emotional self expression is to be found in the creation of works of art. The unspoiled impulses of the child's imagination have made many an artist enthusiastic; as for instance, the late Paul Klee. The child works in many media, and

\*"Portfolio for Nursery School Teachers." See Bibliography No. 5.

progressive educators are anxious to provide not only the tools and surroundings to help with these activities, but also to avoid the production of stereotyped work. Children keep busy happily with painting at easels, finger-painting, or pasting compositions of colored papers. Another medium of creative play is clay, a material naturally appealing to children and which they delight to poke and press into forms which they eventually learn to control into fanciful images of the things seen in nature and in imagination.

Children also like to look at picture books and listen to stories, both of which exercises help to stimulate imagination and add to mental growth. The books should be placed where they are easily accessible on low shelves or tables. Very much related to story telling are the musical activities, including finger plays. Besides group singing, where the teacher assists at the piano or with some other musical instrument, music is present during the whole day in spontaneous singing and rhythmic expression of individual happiness. Particularly with older children, an orchestra can be formed, using simple instruments, drums, bells, pot-covers, or clapping hands. A phonograph can be found today in most preschool rooms.

Dramatic activities of one kind or another bring the children a variety of experiences, carried on hand in hand with the building of a house, a stage, a store, or a post office. Doll houses and doll corners also belong to this type of play. Sometimes these play houses are of a kind that can be used inside as well as on the play-



John H. Lohman Photo



Hedrich-Blessing Photo



Routine activities such as sleeping, dressing, washing and feeding require flexible space, ample storage, child-scaled equipment. Left: Neighborhood Church School, Pasadena, Calif., Smith and Williams, Architects. Center: White Oaks School, San Carlos, Calif. Right: Crow Island School, Winnetka, Ill.

ground. Schools which can provide sufficient space sometimes have inside equipment like the jungle gym or slides such as are ordinarily used outdoors. As can be seen from the schedule, outdoor play is favored very much, depending on the weather and the child's needs. Playing on the lawn, in the sandbox, wading in the pool, riding on a tricycle, using the swing or the jungle gym are all well loved activities.

It requires considerable skill on the part of the teacher to carry out the day's program successfully without

accidents. To insure safety for the children, the architect must design a building which minimizes danger and in which supervision is made easier than is often the case.

After the play period in the morning, the children will go to the bathroom. They will then have their lunch, followed by a nap. These periods, together with the routine bathroom activities are rather important. More and more attention is being given to the health program in pre-schools, because the success of the educational

(Continued on page 174)

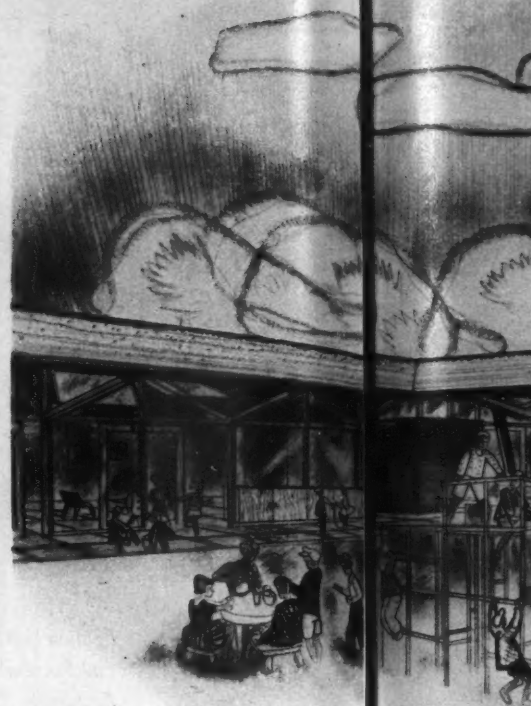
Routine activities include story telling and group instruction. Classrooms should be adaptable for informal groupings as shown (right) in the Kindergarten Room, Lincoln Elementary School, Lincoln, Mass., Anderson and Beckwith, Architects



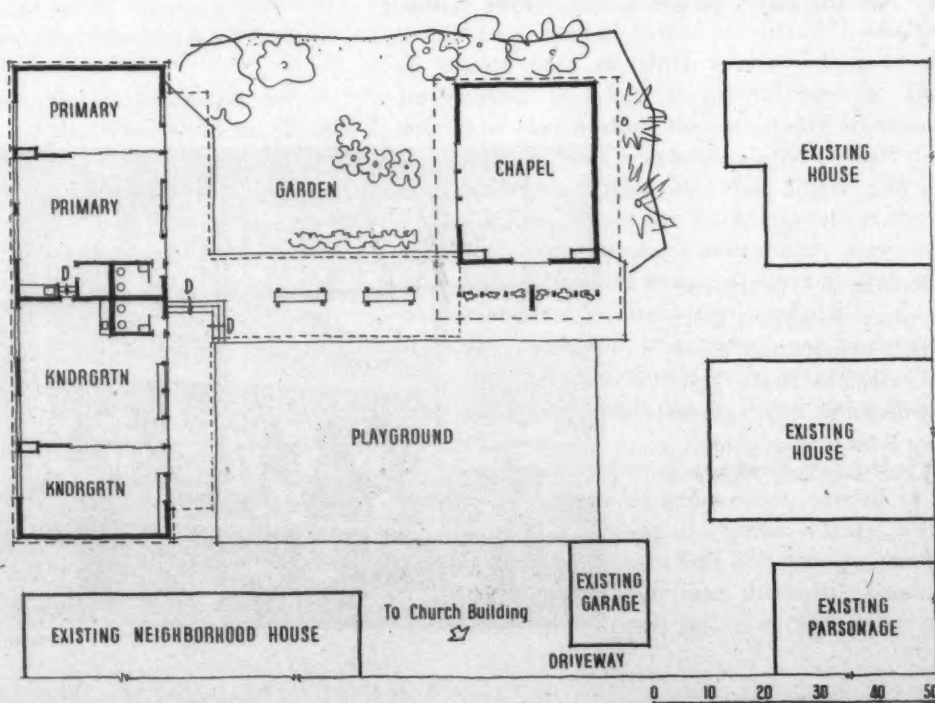


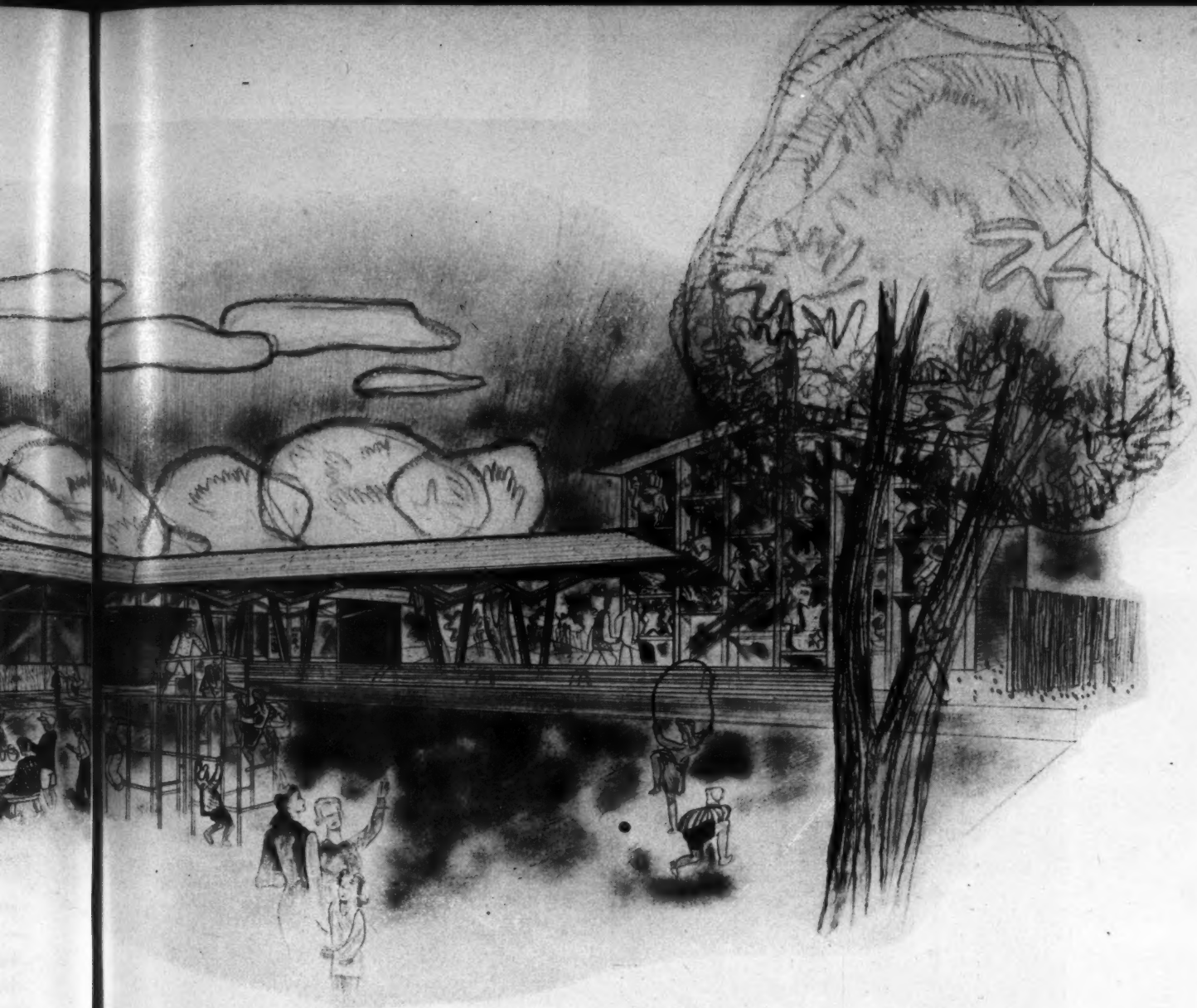


Julius Shulman Photo



The plan for this combined Sunday School and week-day Nursery School correlates both exterior and interior areas into flexible, usable spaces. The rendering (above right) shows the project as it will appear on completion. Above is the classroom building. Future plans include a second classroom building to replace the houses at right





## SUNDAY SCHOOL DOUBLES AS NURSERY SCHOOL

*Religious Educational Building  
Neighborhood Church, Pasadena, Calif.  
Smith and Williams, Architects*

**N**URSERY schools are seldom run as a separate entity. Most often they are run in conjunction with a sponsoring organization, such as a Parent Teachers' Association, a housing project, or, as in this case, a church. Sunday school facilities are used during the week for a nursery school program. The Neighborhood Church found, however, that due to increased enrollment their existing buildings were becoming extremely crowded.

A delightful, flexible solution, with provision for more expansion in the future, has been evolved by Architects Smith and Williams. On a pepper tree shaded lot adjoining the original property to the north, classrooms were laid out to house nursery, kindergarten and pri-

mary children. Ample space was freed in the existing buildings to accommodate older boys and girls. A children's chapel was placed on the opposite side of the plot, connected with the classrooms by a covered walk. The major portion of the lot was set aside for a quiet chapel garden, where children can worship out-of-doors, and for a playground for the care of children during church service. The playground was placed so that it can also be used by other church groups for barbecues and outdoor meetings. When needed, it is planned to flank the chapel by another classroom building on space now occupied by two houses. The chapel, not yet constructed, will form the focal point of the quadrangle. Its entire south wall is a screen composed of small redwood sculp-





Julius Shulman Photo

tures representing Biblical stories with child appeal.

The classroom building is made up of four large rooms and central utilities. Folding partitions permit the rooms to be opened up into very large areas for use by the nursery school during the week, and for assemblies and departmental activities. Glass walls on the garden side open interior and exterior into a single work and play area in good weather. Sturdy natural finishes on the interior permit the children to romp at will. Walls are brick and stained plywood, floors are concrete. The back wall of the building is on the property line, and has high obscured wire-glass windows. The wall space below them is fitted with tack boards to display the children's work and illustrations for lessons. Two wall furnaces are used for heating, and serve adjacent classrooms.

The exterior of the building was kept simple to harmonize with existing redwood structures. Walls are of red brick to comply with city ordinances requiring

fireproof construction. Exposed beams support roof and overhangs. A diamond-shaped truss was devised for the glazed side of the building to give more light and air, and to permit wide overhangs for shelter on rainy days. The same truss, with rough-carved supports will be used to shelter the walk to the chapel. Until this is built, a rustic fence is used to separate the playground and its noise-inspiring equipment from the garden, where the children can gather around a table with a teacher for a quiet story.

Ample storage space is provided in each classroom for folding cots and equipment for play and instruction. The central utility area includes lavatories which open to both interior and exterior, and a hot water heater and supply closet. Pantries for group feeding are placed in classrooms on either side of the utility area. Suspended drop fixtures with concentric ring baffles are used for artificial lighting of the classrooms.



*Flexibility of indoor-outdoor relationship is shown in photos left and above right. Sliding interior partitions and glazed walls open to join rooms with the outside. The playground, center right, has all equipment in full view of teacher. The garden, below right, is a quiet place for listening to stories, includes plants for nature studies*





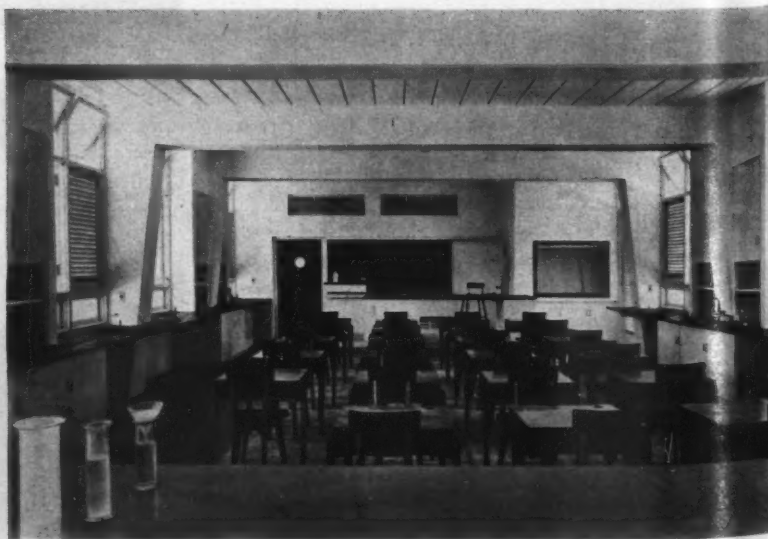


## GENERAL SCIENCE AND HOUSECRAFT UNIT,

*Ralph Crowe, A.R.I.B.A., Government Architect and Planning Officer*



Tom Leonard Photos



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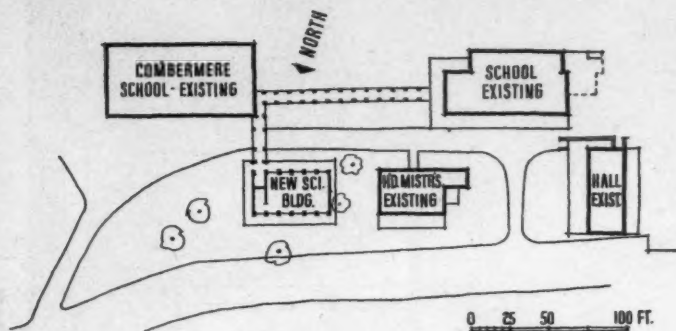
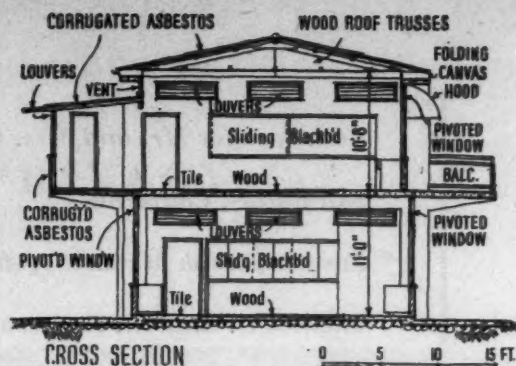


## QUEEN'S COLLEGE

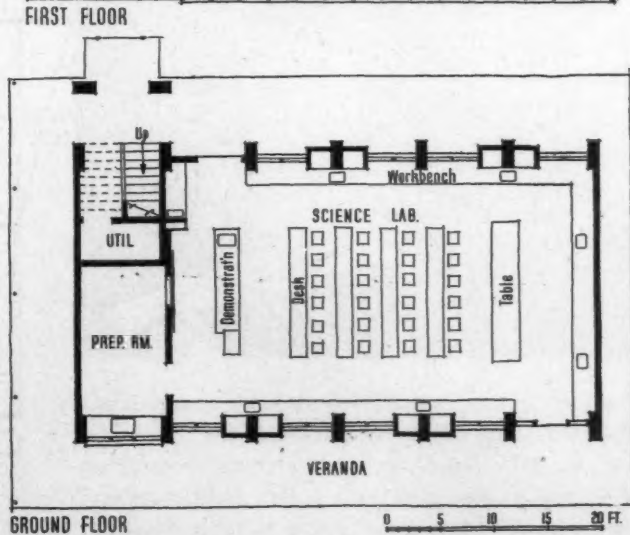
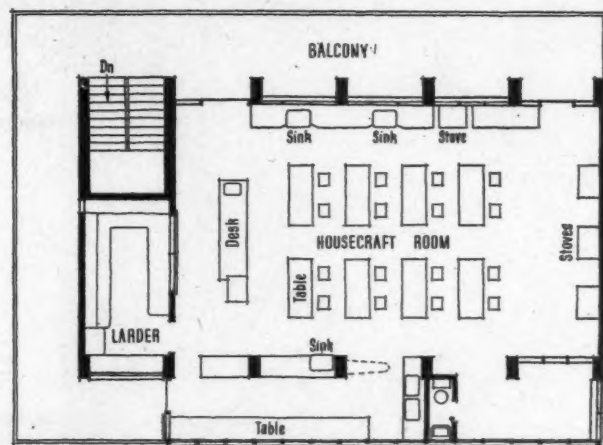
*Bridgetown, Barbados, B.W.I.*

**B**ASIC to the design of this secondary school science building in Barbados was the necessity of providing maximum air circulation and at the same time excluding the island's driving rains and hot sun. On the lower floor the ventilation problem was further complicated by the fact that the Bunsen burners had to be sheltered from disturbing drafts. Laboratory windows, therefore, were given a fixed glass panel, about 12 in. high, along the laboratory work benches. Louvered ventilators were installed in the end wall, facing the prevailing winds from the east, to ensure a steady flow of cool air. The upper floor was cantilevered to give weather protection to the laboratory below, and to provide the domestic science room with additional space. Louvered hoods were used for sun control.

Construction is of local coral limestone piers with concrete block panel infilling. Precast concrete floor units were used (for the first time in Barbados) between the cantilevered beams of the upper floor.



The new building is so placed that it can serve as a nucleus for a wholly redeveloped campus, which is badly needed. A covered walkway connects it with the old buildings, one of which was taken over from Combermere School for boys, now relocated in new quarters on a different site





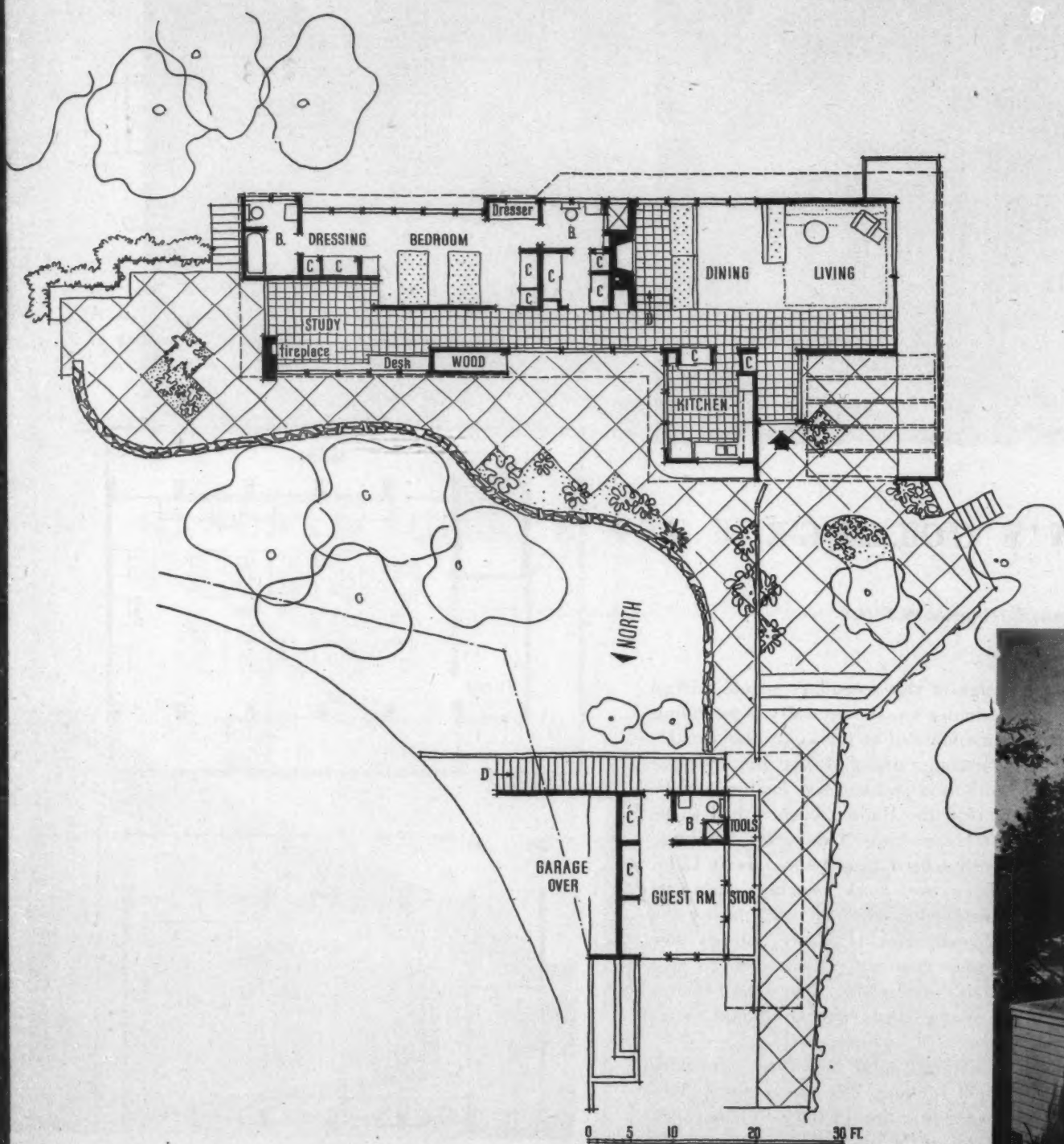
*Residence for Mr. and Mrs. Clarence Bowman*

*San Rafael, California*

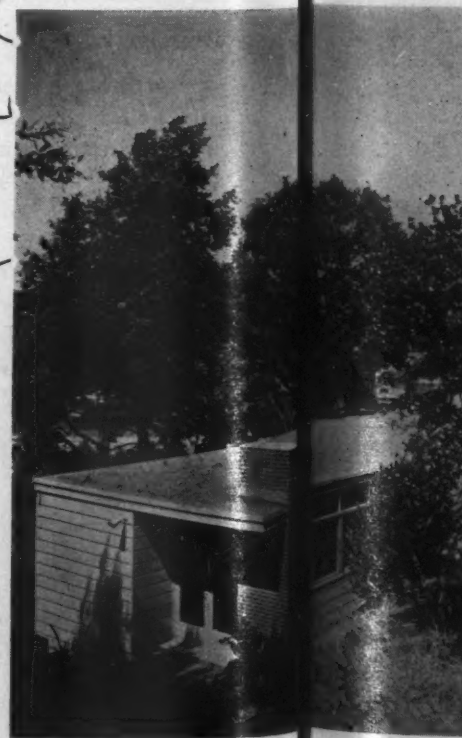
*Francis Joseph McCarthy, Architect*

*Thomas D. Church, Landscape Architect*

## HILLSIDE SITE USED



WHEN  
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## TE USED TO OBTAIN MAXIMUM PRIVACY

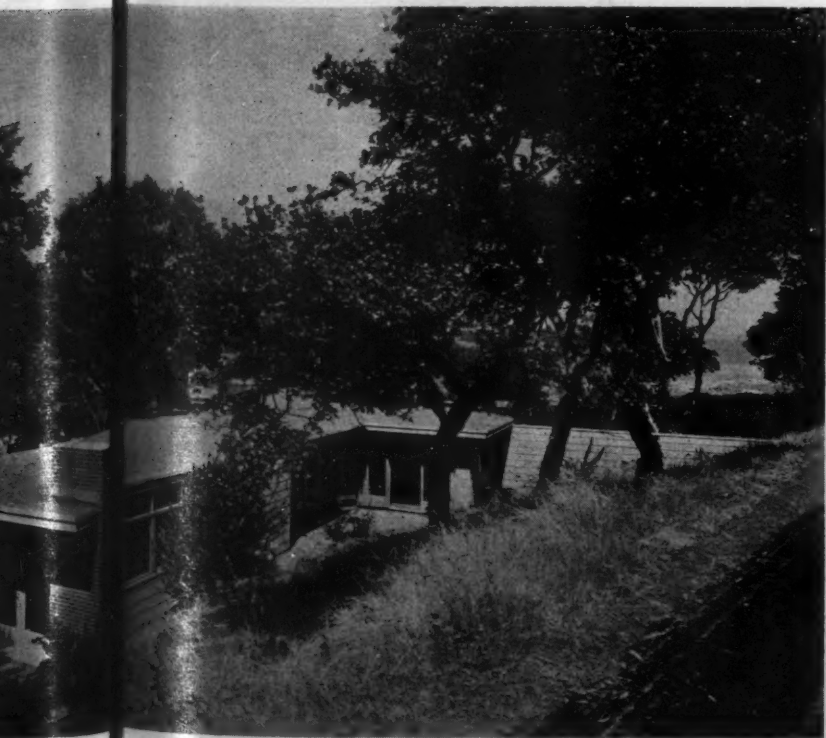
WHEN this house was first planned it was intended solely as a weekend retreat, and only the living-dining-kitchen wing was built. Later its owners, a professional couple, decided to enlarge it to its present size to permit year-round occupancy after they retire. Their requirements included a large master bedroom with two separate baths and dressing areas and an adjacent study well isolated from the general living area.

The steepness of the wooded site (so steep that the actual building area had to be cut into the hill) was used to give the house unusual privacy and a secluded terrace facing the view. The garage was placed further up the hill, directly accessible from the main road.

Exterior of the house is redwood channel cut, rustic siding, stained gray. Framing is timber, foundations are concrete. The roof is tar and gravel.



Roger Sturtevant Photos



The steepness of the site permitted a 2½-story garage building, with the garage itself (two-car) on the upper level, a guest or maid's room and bath immediately below, and tool storage and laundry facilities half a story lower still. It also permitted a completely secluded terrace (top of page) facing the main view



RESIDENCE FOR MR. AND MRS. CLARENCE BOWMAN



Main entrance (above) opens to landscaped terrace, across which is garage and guest house. Living-dining area (right above and top opposite) has large fireplace with a sunken hearth accommodating a double sofa. Study (two lower photos opposite) is at quiet end of house, adjoining master bedroom (right). Floors are oak in living-dining room, carpet over pine in bedroom, terrazzo in bathrooms, hollow tile elsewhere. Interior walls are plywood, natural finish; ceilings are plasterboard, painted a golden yellow.

Roger Sturtevant Photos







## RESIDENCE FOR

## MR. AND MRS. WILLARD C. MILLS

*Near Danville, Calif.*

*Anshen & Allen, Architects*

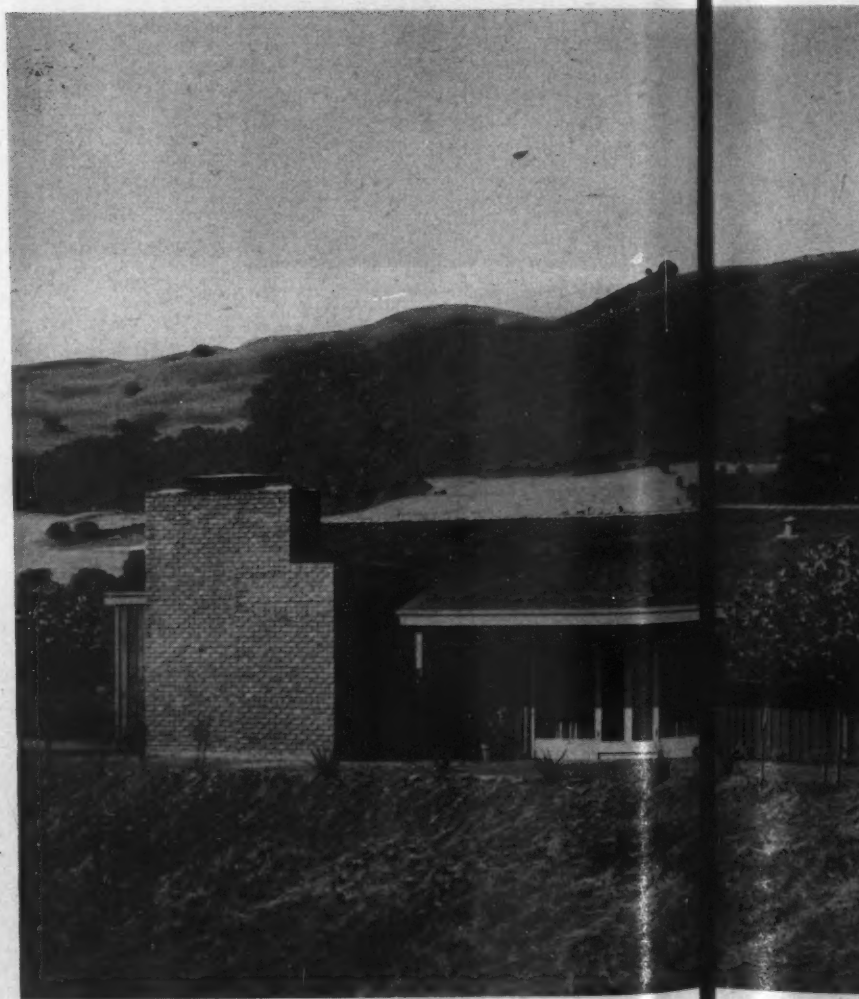
THIS HOUSE, planned for a family of four including two small boys, is situated on a level-topped spur projecting to the southeast from a higher hill. A fine view of the San Ramon Valley to the south and southwest prompted the placing of the house lengthwise along the spur, with the services and entrances on the northeast side, close to the access road. The living area, of course, faces the view.

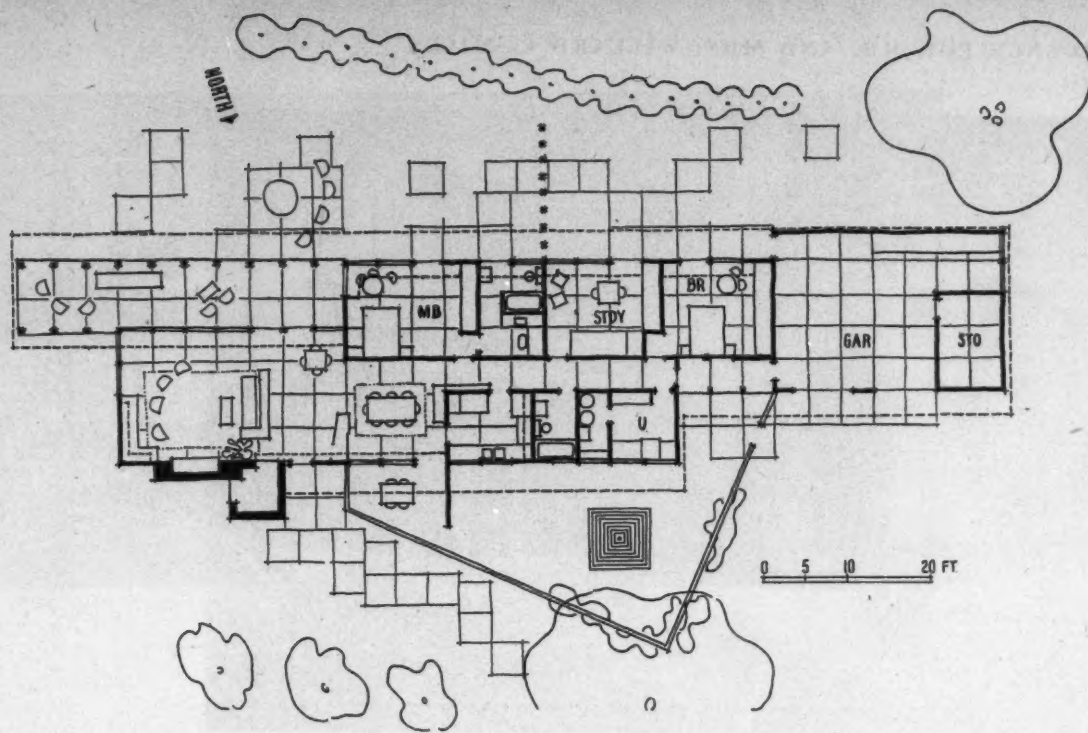
The owners stipulated that the house must be built quickly and economically of readily available materials, and that it have a panel heating system. They required also a living-dining area opening to a porch and terrace; three bedrooms, two baths, a shop, and bulk storage facilities. The architects met the requirements with one-story wood frame construction on concrete floor slab. The top of the slab, which contains the heating pipes, is only a few inches above finished grade, but excellent natural drainage eliminates the risk of dampness.

A climate which is cool in winter and very hot in summer made the use of large glass areas something of a problem. To control heat and glare, the porch roof, 12 ft wide, was extended the full length of the living room and continued as a 4-ft overhang the length of the bedrooms. A ventilated attic air space with 2 in. of insulation at the ceilings gives still further control, and a sprinkler system, installed at the ridge of the roof, can be used for wetting down the roof in especially hot weather.

Exterior walls are redwood board and batten. Roofing is cedar shingles.

Roger Sturtevant Photo





*All entrances—main, service and garage—are on same side of the house.  
Projecting dining terrace wall and drying yard fence on plan have not been built*

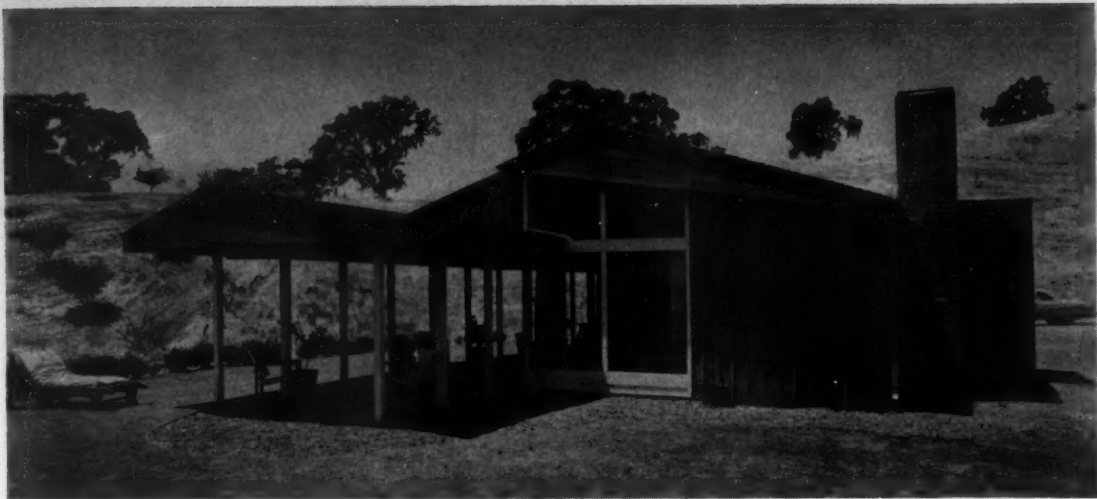


RESIDENCE FOR MR. AND MRS. WILLARD C. MILLS



*Huge mass of brick chimney provides convenient wood storage area opening both to exterior (opposite page) and to living room (below). Main entrance, immediately adjacent, leads directly into living room. Floors throughout are black asphalt tile, waxed. Interior walls are sheetrock, taped and painted, and stained redwood boards. Ceilings are sheetrock. Fluorescent lighting is used in living-dining area*



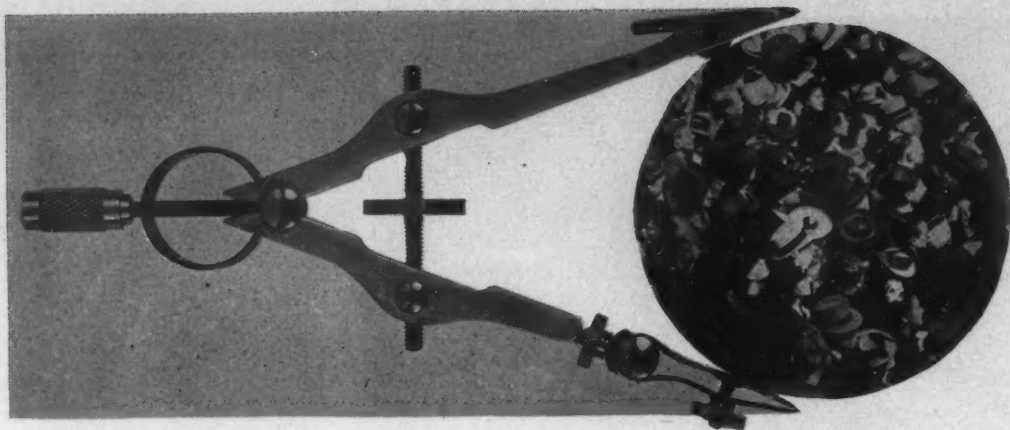


Roger Sturtevant Photos

*Living room makes the most of the view across the valley with large windows and doors opening directly to a covered porch and an open terrace beyond.*







*Beauty of modern architecture "yet to be translated" is cited as the next objective of design, to satisfy "the complete man." Although architecture has been freed from the dogmas of the past, "we have taken away from the man in the street all the stereotyped little ornaments, cornices, cartouches, and green fake shutters, but we have not been capable of giving him back the equivalent in emotional value." The address, given here in full, was made by Pietro Belluschi on December 17, 1950 when he was the recipient of an honorary LL.D. degree from Reed College, Portland, Oregon.*

THIS award I choose to regard not so much as a recognition of personal merits, but as an official gesture of sympathy with the general ideals which many architects of my generation have validly held and fought for these last few decades.

I will say first that I am glad to have lived through such a momentous period of change. My early life was influenced and not a little stifled by the glory that was Rome; as a student in architecture I could hear the wide discontent of the intellectuals and their desire for renovation. Led by few men of genius, the younger generation was spoiling to shake architecture out of its lethargy, slay the "Beaux Arts" dragon, and clear the ground for the new era.

Without getting myself too deeply involved in trying to describe the historical continuity of architecture, or in arguing the underlying esthetic philosophy which to me explains tradition in its larger meaning, I shall try to speak of the ideals on which contemporary architecture is based, to what extent these ideals have been realized up to this time, and of what help they will be to us in our future development.

FIRST and foremost of these ideals is the right to free our thinking from the dogmas of the past. It has now become clear that the various historical forms developed by past generations cannot serve us well. Freedom has its dangers: without discipline it leads to anarchy; but just as in politics, freedom is the healthiest climate for progress.

Complementing this ideal of freedom is the right to interpret our own world in forms suitable to the demands and purposes of the times. We believe that architecture, in order to be significant, must absorb and give meaning to modern methods of construction, and to newly developed materials, as well as reflect the physical environment of a region and particularly the traits of its people. In this respect, the West Coast, with the pioneering heritage of its people, with definite natural characteristics of its own, and with less binding ties to the past, has been able to advance more visibly towards the realization of valid contemporary forms.

# ARCHITECTURE AND SOCIETY

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*By Pietro Belluschi*

Finally, we believe in establishing the right to think and speak in behalf of our own society, if we can ever hope to be of help in bringing some degree of order out of the confused and ugly environment which is the modern city. In this important task, conservative architects have looked in vain to the past for ready-made solutions, using as example and guide the European city, with its stately palaces, fountains, monuments and plazas. Unfortunately, the social order which produced such appealing forms no longer exists.

Our own society is conditioned by the machine and dominated by the desires of the common man. The common man no longer wants to live in slums; he does not ask for stately palaces but for clean houses and children's playgrounds. He wants comfort at the factory and recreation after work; he wants good schools and good transportation; he demands that the problems created by traffic, smoke and parking and shopping be solved to his convenience — in brief, he wants an efficient city, and in this he is right. Surface embellishments may come later when our esthetic creativeness will have reached maturity.

The ideals of a modern architect may then be very briefly summarized as follows: He must come to terms with his environment; only then can he hope to become again creative, not in the anemic method of the academy, or as a fashionable hireling of the wealthy, but as a lively interpreter of the new social order and as a prophet of his age.

**T**O WHAT EXTENT have we succeeded up to now? We readily admit that our accomplishments are very modest, and our successes mostly on the negative side. What little we have to show for our efforts has not been easily achieved, not so much because of the doubters among clients and public, but mostly because of our own conflicts and limitations. We had to find our way among the great many technical advances, and distinguish the basic from the superficial; we had to develop the inner discipline which alone could prevent us from being seduced by the many transitory forms offered for daily consumption. It is also apparent that we have succeeded in designing good factories but have failed to create beautiful monuments.

Today we are more honest, more practical, and quite functional, but it has been at the expense of grace and gentility. We have taken away many of the established forms, so cherished by our ancestors, and have replaced them with stark utilitarian ones, which give little nourishment to the senses. We have taken away from the man in the street all the stereotyped little ornaments, cornices, cartouches, and green fake shutters, but we have not been capable of giving him back the equivalent in emotional value.

The fact is, that after three decades of rather cold functionalism, we have come to the realization that emotion is a great force in our everyday world; it pervades



## ARCHITECTURE AND SOCIETY

our actions, our political motives, our very happiness. Yet emotions have not been given the guidance they deserve; they are the very soil in which both architects and public may grow to creativeness and understanding. We can observe that people, beautifully trained in scientific disciplines, are quite lost when faced with new artistic experiences.

Looking at our cities, it is quite obvious that we have not been the interpreters and the prophets we had wished to be; we are still shy on wisdom, but I believe our thinking has acquired a greater clarity of purpose and discovered new aspects of beauty, yet to be translated. We have also found that beauty is forever changing and eluding possession, perhaps because of the power of the human mind to perceive and to create, and that power has no end. We have rediscovered on our own terms that architecture is the art and science of organizing space and relating it to man for his pleasure and comfort, and that an architectural work really lives and shines only when it is part of a larger organization.

It may be said that the sum total of our vision spells "Utopia," but I believe that the complex events of our modern life, which eventually will force us to make fundamental decisions, are accelerating in their tempo. Wars, obsolescence, traffic, air travel, mass education and so on, will inevitably bring us new demands for change, and from them new forms. If we are prepared, and if our vision is clear, we can make each move, however small, an orderly and logical step toward the total plan.

When I compare what was produced in the architectural schools years ago, when the Beaux Arts held power, and when all good architects came from Paris, with the present work done by today's students, I feel greatly encouraged. I believe that the next generation will really make us proud; from the lesson we have learned I hope they will acquire a new discipline of the mind to take the place of the discipline of the "styles," and that they will have enough feeling and integrity of purpose to make their work of lasting significance.

And now that most of the battles against dogmas have been won, I hope they may also gain a certain amount of tolerance for all the human symbols and forms of the past, because people need them and live by them to a greater extent than is realized, because they furnish a feeling of continuity which gives them faith in their evolution. This fact the architects must understand if they want to be the leaders.

In these dark times we have a greater need of faith in the future than ever; by the symptoms of current events our civilization may commit suicide on a tremendous scale, and in a shattering shortness of time. But I persist in the optimistic view that in all events the foundations of a new renaissance are being laid now. It will not be for us to see it, and we must only reckon in terms of generations for its flowering, but I believe a better environment for a happier mankind is in the making. It is a task to excite the imagination, and it is now in the hands of our young people.

**I**T IS FOR THIS REASON and in this hope that I have elected to forego a busy practice to take part in education. I look with great misgivings at my accomplishments of the past, full as they are of compromises, failing of their goal, yet I have never doubted that there were ideals to sustain; those I hope to be able to transmit to the younger generation. How I will like sitting on the sidelines as a sort of swivel-chair general, pontificating and coaching, after having fought on the field, I do not know, but I hope that my words of encouragement may be of some help.

What really made me decide to accept the deanship at M.I.T. was the statement of policy of its president, Dr. Killian; he stated in different and better words that a major overall task of the Institute was to unite man's knowledge of science with the wisdom of feeling in the hope of bringing about an integration of his emotional and intellectual powers, the end being the making of the "complete man" for a happier and wiser world. And God knows, we need it.

# INDUSTRIAL BUILDINGS

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As America again tunes up its industrial plant for war, it appears that the program might be quite different this time. There will no doubt be a great expansion of industrial facilities — indeed it is already moving with some vigor — but so far it has taken a different pattern.

It is more general this time, running toward factory buildings of all types, in place of the concentration on whopping aircraft plants or chemical tank forests of the last war. True, there is expansion in steel, aluminum, chemicals and oils, but there is also a steady increase in factories for everything from Coca-Cola or frozen pastries, on through the full range of products. Thus it means activity for architect and engineer firms, large or small, clear across the country.

Simple expansion for a guns-plus-butter economy is by no means all there is to it. Continuous change is the true distinction of America's much-heralded productive capacity. We have the best in the world, it is true, and our enemies fear it. But they might fear more the old American custom of always tinkering with it, modernizing it, moving it, continually adding more automatic machines and processes. All tending to speed production, cut costs, save manpower, increase sales, make new gadgets and improve old ones. So there are dozens of reasons for building new factories. As somebody has put it, the more modern your plant, the better your business; and the better your business, the faster your equipment gets out of date — it is only when you are on the skids that your old plant is good enough.

Worry of wartime adds further reasons for study, for change and for new building. Are we prepared for enemy bombing? (The answer to that one is scandalous.) What can we do to protect productive machines and personnel? How can we minimize the damage? How would we get back into production after bomb hits? Could we rebuild in a hurry? Should we undertake a long-pull program of dispersal of plants? Or underground construction? Do we need certain standby facilities?

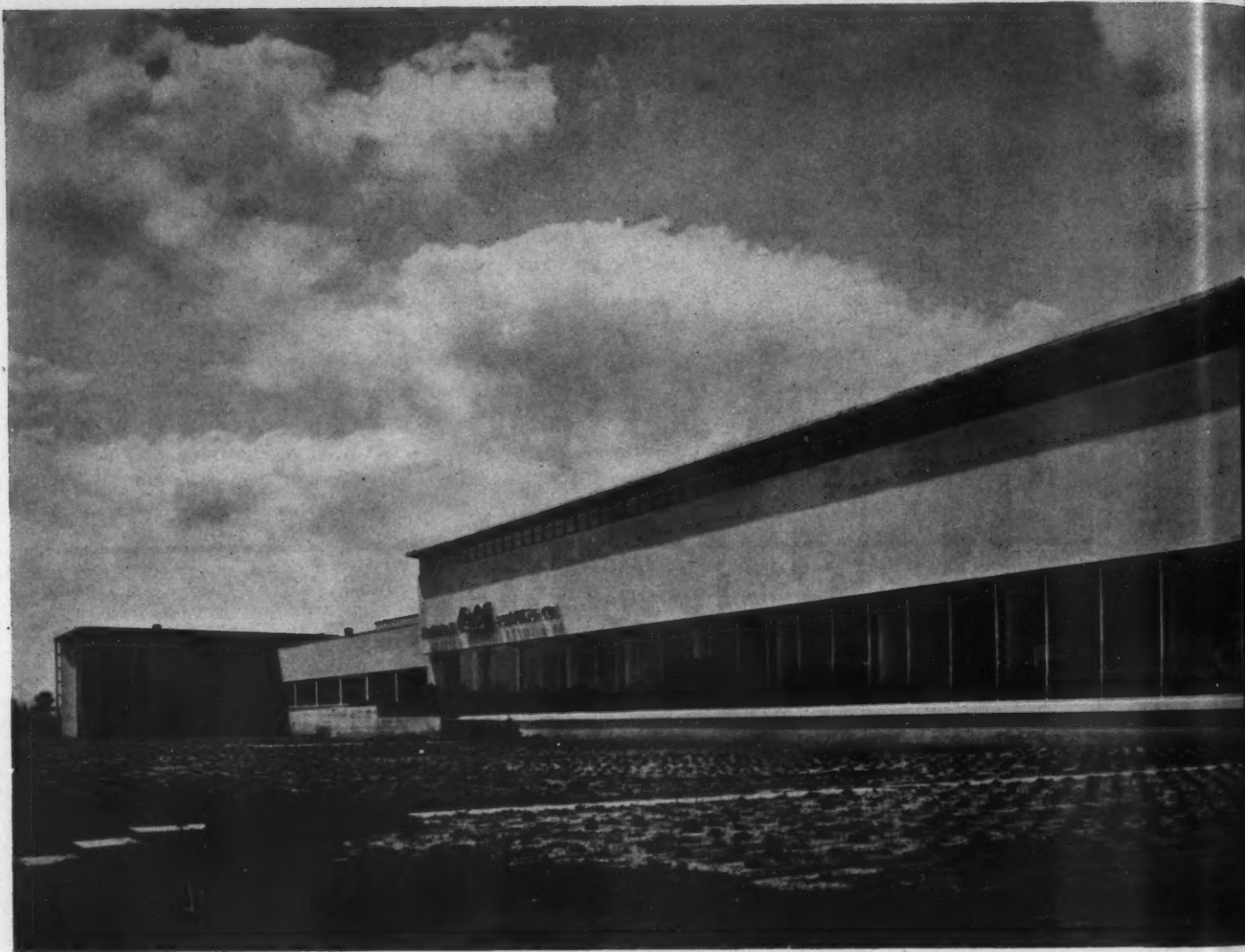
Architects and engineers will find themselves engrossed in such questions, as preparation for war becomes active. Design professions will be heavily involved in civil defense, as well as design of new facilities. Civil defense is rapidly being organized, presumably this time will be general over the whole country. So far, however, it has all been directed to defense of the civilian population; very little has been heard about defense of productive capacity, or preparations for rebuilding in case of bombing.

This study includes a background article on what bombs do to factory buildings, based on reports on the bombing of Germany, Britain and Japan. While this basic material must, at this time, be in rather general terms, it is interesting and in some respects encouraging. But the real task of translating present information into tangible guidance for bomb-protective building design is largely yet to be done. As of now it remains a major assignment for architects and engineers.

— Emerson Goble



I. B. Lindenthal Photos



Bottling Coca-Cola here requires a half dozen major buildings, a great fleet of trucks and an imposing array of materials handling equipment. This one pioneers a new system of loading and handling, and has become a prototype for several plants now building. It also won an award from the Texas Society of Architects, 1950 Awards Jury

## PROTOTYPE FOR BOTTLING PLANTS

*Houston Coca-Cola Bottling Company*

*Houston, Tex.*

*Stone & Pitts, Architects and Engineers*

WHEN production rises to 1200 bottles a minute, or 22,000 cases a day, even so simple a process as bottling Coca Cola involves construction on a big scale, and sets before the architects some problems of layout and material handling to test their proverbial ingenuity in these matters. The architects for this building studied 43 bottling plants in three countries, developed a new scheme, tested and revised it, until this plant became a pioneering project of considerable importance.

Its central feature is the "Drive-Thru Building" (see page 124), with 15 lanes where trucks disgorge empty bottle cases and load full ones with a minimum of manual handling. Conveyors carry off the empties and deliver filled cases to raised platforms between lanes. The system saves as many as 44,000 manual case-handlings in a single day. And the plant is now the prototype for several others the architects are planning.

The drive-through system was originally suggested by engineers of the parent Coca-Cola company, but had never been tested. The architects translated it into a full plant parti, complete with conveyor systems, gravity feed lines and so on. Then a model was constructed for study. When this began to look good, a full-scale mock-up was built, consisting of one lane with operable conveyors. This was tested many times with actual trucks and bottle cases. The tests resulted in several changes in original thinking, all of which were incorporated in final plans for this building. The system saves time for an expensive fleet of trucks as well as eliminating much handling of cases, and 75 of the trucks can park in the lanes overnight.

The several buildings are deployed around the conveyor lines, so that the various elements of the process feed into the lines at the proper point, with mechanical handling wherever possible. All material flow lines, conveyor systems and bottling machinery arrangements were designed and detailed by the architects. So are assembly line methods introduced in an industry grown to huge proportions but always beset by inefficient handling facilities and always struggling to expand.

Architecturally the buildings exhibit their functional aspects quite naturally. The trucking buildings are of factory type construction with corrugated asbestos panel walls. The main building, housing bottling machinery and offices, is faced with face brick and limestone, and with tall strip windows on the first floor, for the bottling works is really a great display room for a major industry.







Auditorium wing, main building

I. B. Lindenthal Photos



Main entrance vestibule



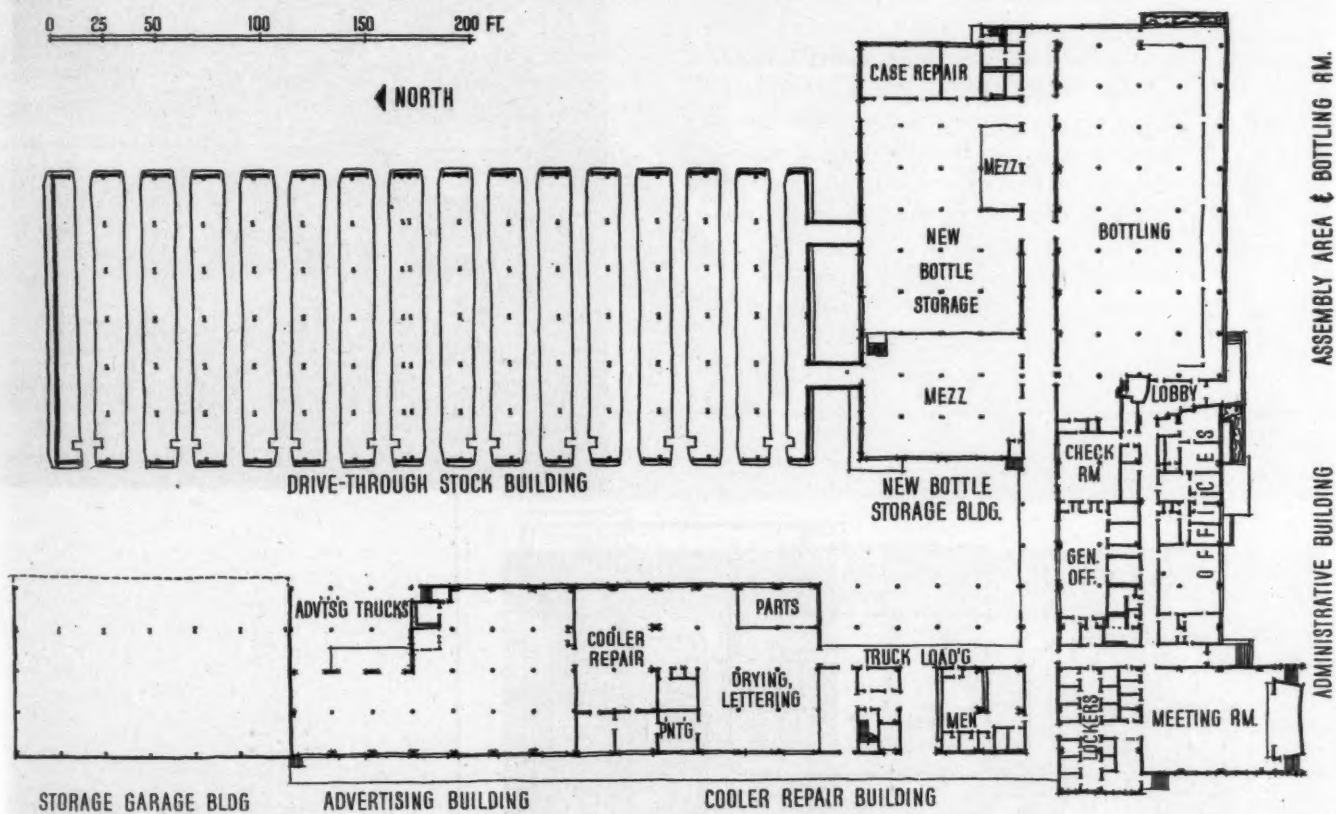
Bottling plants for many years have put their intriguing gadgetry on public display. The Houston plant, capable of cleaning and filling 1200 bottles a minute, offers this imposing line-up for delegations of visitors



View of principal lobby

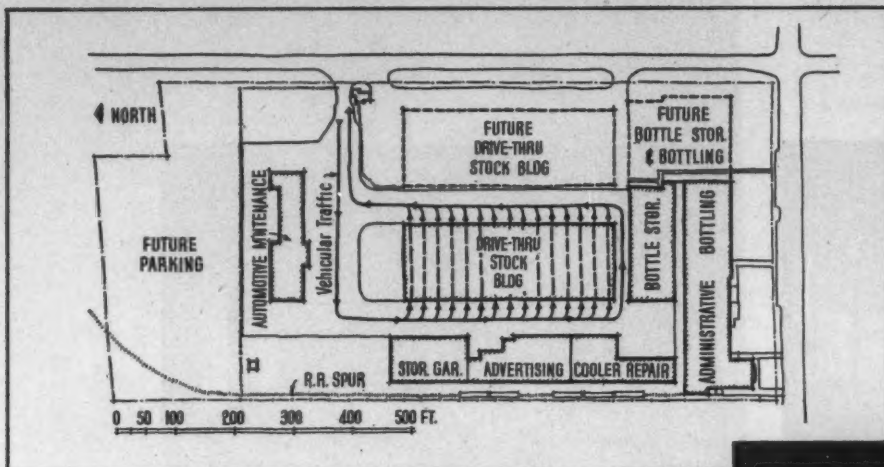


Interior of auditorium

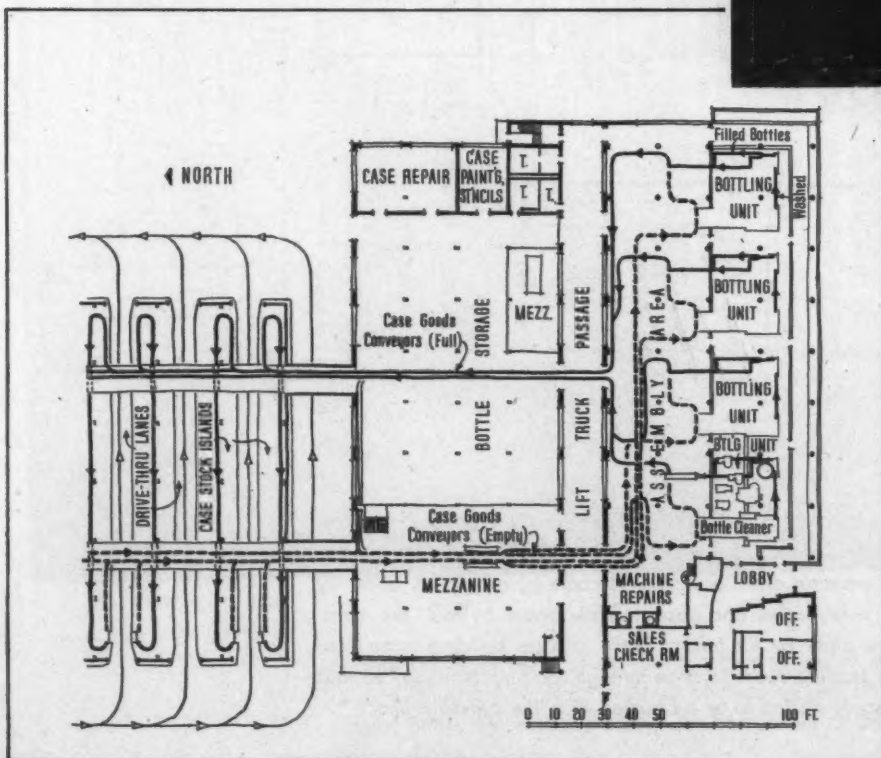


Principal group of buildings puts all functions except automotive maintenance in a U-shaped disposition on the basis of handling problems. Advertising display material and bottle coolers come in, or go out, either by rail or by truck; new bottles and cases usually arrive by rail, are transported within the plant by lift trucks. Bottle storage building is on conveyor route from bottling room to drive-through loading building, so that bottles may be easily added to or subtracted from the conveyor lines





Site plan above shows route of trucks into plant, through "drive-thru" building for unloading and loading of cases (center photograph). Case conveyors cross these lanes (diagram below), pick up cases of empty bottles, move through bottle storage building to bottling units. Cases of filled bottles go on along conveyors to forward end of truck lanes for loading. Main conveyors go overhead across truck lanes, secondary lines break around and downward along lane platforms, pick up empty cases at end of platform, then rejoin the main empty conveyor

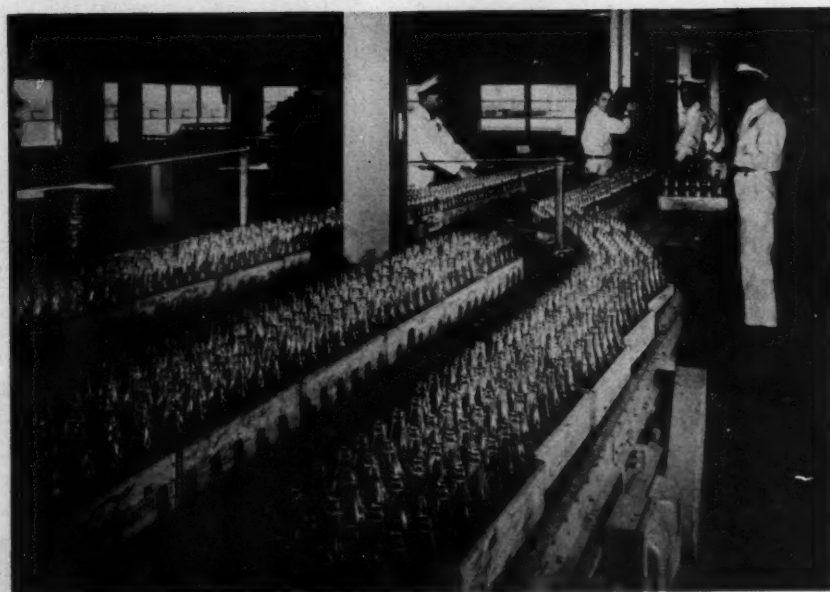


Cases, either empty or full, are stacked in tiers on platforms right beside truck lanes, reducing manual handling to a minimum

I. B. Lindenthal Photos



Control center for conveyor system, right, is in bottle storage building. Here cases are directed toward machines on schedules





I. B. Lindenthal Photos



Railroad spur and receiving dock



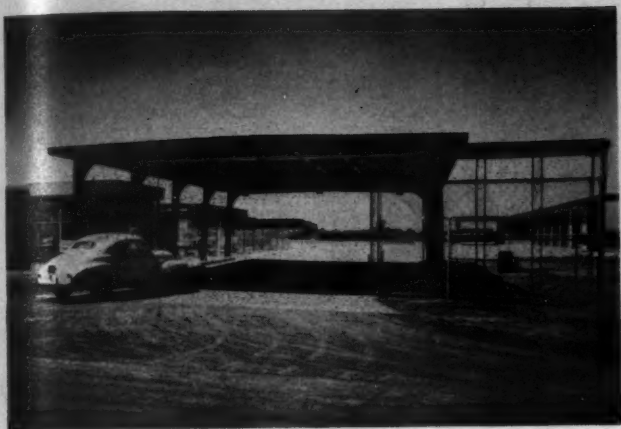
Truck dock, opposite side of building



Truck and auto



Opposite  
Opposite



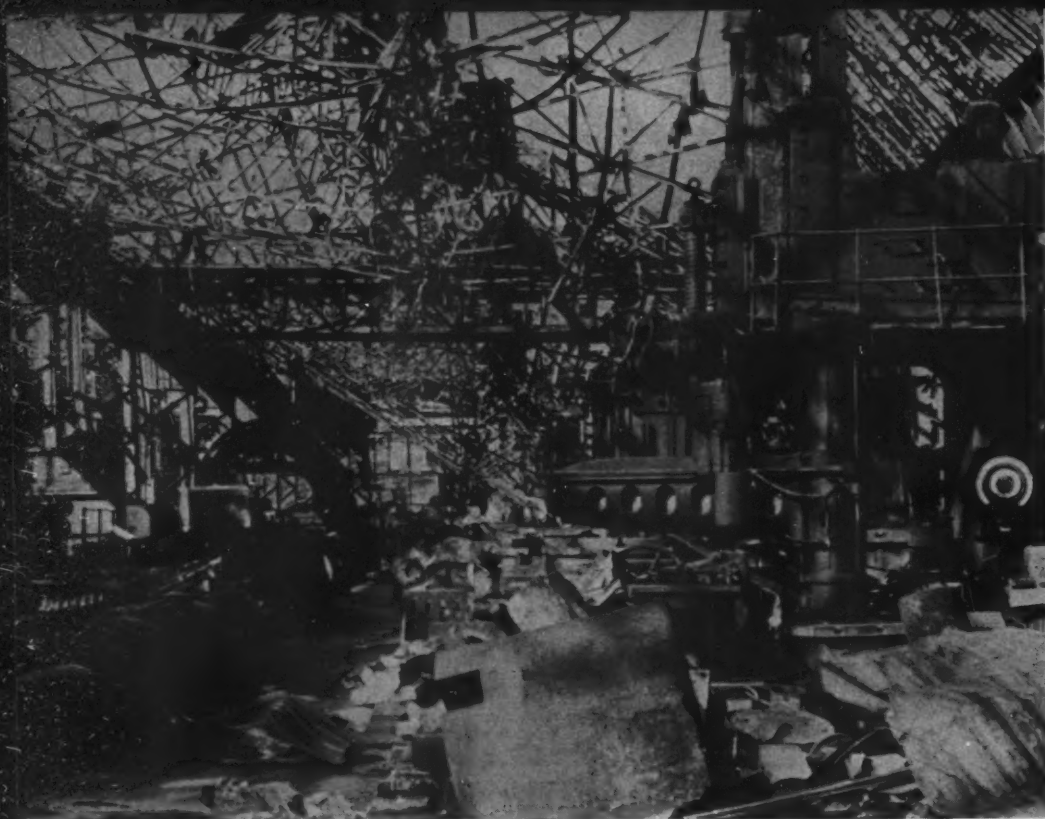
Truck and auto entrance



◀ Opposite page, center: Automotive maintenance building

◀ Opposite page, bottom: Drive-thru building has 15 lanes





U. S. Air Force Photos

Bombs damage buildings more seriously than machine tools; the collapsing building does the damage to the machines. Mitsubishi Arms Factory at Nagasaki after damage by the atomic bomb



In Korea bomb damage to buildings follows the pattern after the war. This is the Chosen nitrogen plant at Konan

## BOMB DEFENSE FOR INDUSTRY'S PRODUCTION

**I**F bombs should fall on American factories architects and engineers would find their skills in sudden demand. Lessons learned in Germany, England and Japan show clearly that the damage to the plant and the interruption of production are largely matters of construction and reconstruction of the factory buildings. The big task is in existing factories, not merely in the design of new buildings or bomb shelters.

Much of it could, and should, be done in advance. In Britain the preparations for factory defense were planned in detail long before the last war, and advance work paid off when the bombs did come. In Germany, on the contrary, the cocky assumption that the war would be won quickly left most of the factory protection to be improvised. Even so the Nazis managed surprisingly well to keep factories producing, or get them back into production quickly, up to the time of saturation bombing, when railroads, power, material supplies were cut off at once. But they lost millions of man-hours in switching from one program to another and otherwise trying to make up for their lack of advance measures.

Defense of productive capacity takes several directions, from the psychological preparation of factory

workers, and their protection, to the quick clearing of debris and re-roofing of buildings after bombs have done their damage. Surprisingly little has been done in this country, even in thinking out the problems of protection for plant and personnel, much less in reducing it all to programs. And virtually none of the actual work has been done.

Valuable guidance comes, nevertheless, from studies of what happened in the last war. The Air Force closely observed and evaluated the results of bombing after V-E and V-J days, and reported in detail in the "United States Strategic Bombing Survey," which provides the background for this article. A further source is a report, "Bombs on British Industry," by A. Wyn Williams, in *Mill and Factory*, Oct. 1950. While a third world war would undoubtedly bring its own special hazards, there is still much to be learned from World War II.

### *Make the Worker Feel Safe*

Psychological preparation might be taken first, if for no other reason because it is so likely to be neglected. This involves, of course, a variety of physical measures to be taken for the worker's safety, as well as other means of providing for his comfort and assurance, all



shows the pattern of the Second World War. after the B-29 Superforts finished with it

Here (Nagasaki) a whole row of machine tools escaped serious damage from falling roof, but were later damaged by exposure. Other machines were torn from foundations

tending to keep the worker at his machine later before the raid and get him back earlier afterwards, and otherwise to maintain his health and efficiency.

"The British accepted the psychological truth (*Mill and Factory*) that if you keep the people mystified, they tend to panic, but if they are informed in advance they are likely to maintain their morale . . .

"It was the full knowledge imparted in advance, psychologically preparing the worker what to expect, that was very largely responsible for the maintenance of morale under air attack. As the Government stated in its official announcement, its design was 'to show how protection can be improvised for workers who continue to work after public air raid warning, but the measures recommended will, of course, be equally useful in the event of bombs falling without warning.'

"The obligation to provide air shelters applied to all employers of more than 30 persons and these shelters had to be built according to strict specifications, as a result of experiments made on what type of shelters would provide a maximum of safety, and a minimization of casualties. Thus no shelter was to accommodate more than 50 persons without a partition.

"The whole purpose of air raid protection in factories was to ensure a sense of safety in the worker and to maintain production under the most difficult condition. To such an extent was the morale of the worker lifted that in the first year of the war the trade unions gave permission to allow the workers to remain at their work, even though the air alarm had been sounded. A system of roof spotters was established. These were stationed on the factory roof to keep watch for enemy aircraft and only when they appeared in sight or when bombs

had been actually heard to fall was the factory air alarm sounded and the workers made for the shelter."

Camouflage was used heavily in the British program, even when it was really known to be mostly ineffective, for it did seem to increase the worker's sense of security. Probably, however, in another war camouflage would fool the worker no more than the enemy.

The Germans did not make use of psychological approaches, in fact scorned them altogether. The iron fist proved effective in keeping workers at their stations, but only up to a point. If shelters were considered inadequate, it took heavy persuasion to keep employees from literally taking to the hills at the first warning signal. On the other hand, frequently protection at the factory was even better than at home, and workers would show up ahead of time at the factory. Nevertheless modern industrial management recognizes that morale and health and comfort make the machines go smoothly and the work more accurate; the iron fist is not for America.

### ***Bombs on Factory Buildings***

One of the significant findings in the bombing survey is encouraging, up to a point. Even German factories, without much advance protection, made quick recoveries after heavy bombing. True, the bombs made rather a mess of the buildings, but the machines came through surprisingly well and could be dug out of the debris, repaired and put back in operation.

In Britain, casualties were but a small proportion of earlier estimates, two or three per cent in some instances. A government report says, "It is generally imagined that in the case of a direct hit the building



and its occupants are doomed. This is not supported by the evidence . . . There have been cases of light bombs (50 kg) detonating on the thin corrugated roofing of single story buildings with little damage other than to the roof covering and with very light casualties . . . There is evidence that in the case of a multi-story building in which all loads are carried by steel or reinforced concrete frames the damage caused by a direct hit (of a heavy 250 kg bomb) will be local. It will be confined, in most cases, to the floor and bay which is hit."

The point at which this encouragement fades is, of course, the possibility of atom bomb attack. The British nevertheless are hoping the A-bomb advance billings will prove to be similarly exaggerated. In any case they are preparing again largely on the basis of World War II findings.

An important fact in all bomb damage reports is that buildings suffer much more heavily than machines. Even in the focal areas hit by atom bombs, and damaged both by blast and fire, a large percentage of machine tools were salvageable. In general at Hiroshima large plants could have resumed operations within 30 days. Two plants near ground-zero were considered 50 per cent destroyed.

No matter what type of bomb hits, including incendiaries, the generality is that machine tools are difficult to damage by bombs. Debris from the covering buildings does more damage than the bomb itself. The degree of the damage, then, depends largely on the type of building.

In Nagasaki, in wood-frame buildings, almost all machines were seriously damaged, but in reinforced concrete or steel-frame buildings only one-third or one-fourth were damaged seriously. In the wooden structures fire accounted for most of the damage. Debris was a major cause of damage in some reinforced concrete buildings whose roofs and walls collapsed. (What the damage to machines might have been without such a protective covering is another matter.) In any case, the vulnerability of a given factory would depend to a large extent on the kind of building housing the productive machines.

At this point it is fitting to include a note of complaint that so little guidance is available at this writing for architects and engineers. Though the wartime experience with bombing has long since been surveyed to a fine point, the translation of its messages in terms of building design has been done only sketchily. Last August the Department of Defense issued a booklet, "Principles of Plant Protection," but as its name clearly proclaims it includes principles only, and these very lightly.

As for protective construction of existing plants the booklet says: "A study of 'The Effects of Atomic Weapons' will show the effect of blast on structures. In some cases, stiffening of the frame against the lateral component of the blast will be possible and this will reduce the chance of collapse. A situation where this is practicable will be the exception rather than the rule. Probably the most important contribution that can be

made in existing buildings is the reduction of the hazard from missiles. An examination of the structure will indicate fixtures, equipment, curtain walls, false ceilings and other features of the buildings that might become dislodged by the blast and lateral distortion. These should be removed or safeguards installed that will prevent their falling and injuring workers and damaging equipment.

"No adequate means of protecting against flying glass is known. The long duration of the blast resulting from an atomic explosion prevents the effective use of backing materials. The use of such materials probably would result in the greater hazard of blowing in the whole window. To a certain extent, small wire mesh that will permit passage of the blast yet stop the larger, more lethal, pieces of glass offers the best protection. If time permits, evacuation to shelter areas will obviate or reduce this hazard.

"Additional safety may be provided by constructing walls around tanks containing noxious or inflammable liquids to contain the outflow in case of rupture of tanks by blast action."

In addition to special protection for inflammable materials, there is also the possibility of localized shields for machines, control centers, power lines and other utilities. The Germans in many instances constructed splinter-proof baffles around special machine tools. The British took special precautions for power generators. There is one instance of a factory which received 21 bomb hits and its generating equipment was still operable. It had been protected by steel casings, covered by 2 in. of cork then a layer of concrete. The British also prepared in advance for the disruption of water lines, having lengths of pipe ready to bridge bomb craters.

All such measures had their share in minimizing bomb damage, and helped to some extent to get factories back into production after an air raid. Many of them are minor matters, in terms of the special obligations of architects and engineers, but even these become important, and it is high time to begin thinking of them.

The real task for the design professions might be the rebuilding job after the first buildings are destroyed.

### *Rebuilding after Bombing*

In Germany the construction industry found itself rather suddenly busy. In the early days, when defense measures were scorned, the German building fraternity converted rather slowly to a war economy, but the Allied air raids soon set a pattern for construction activity. And it was an architect, Reichsminister Albert Speer, who pulled the strings and issued the orders. Soon everybody in construction fields not already in other stations was busy with repair of bomb damage, reconstruction of factory buildings, construction of shelters, emergency tanks and reservoirs, underground plants, as well as emergency housing.

Reconstruction of factory buildings might make engineers and architects in sudden demand. In Germany this work gradually became more frantic; at first they

rebuilt with typical German thoroughness, but toward the end they simply cleared away the debris and tried to operate the productive plant right in the open.

American inventiveness, with some preparation, might be capable of something simple and fast. It might be possible to shove the debris aside and re-roof the plant completely with some covering at least weatherproof, if the worst came to pass. We can scarcely carry preparedness to the point of having a duplicate building sitting on the sidelines, but it might be possible to develop a prefabricated system for factory construction planned in advance. Or one might even visualize a central store of prefabricated panels, in a heavily industrialized community, ready for fast trucking to some critical plant knocked out by bombs. Even a tentlike structure might make it possible to get production going again.

If this all seems like looking under the bed, the German experience is worth thinking about. For all their clever improvising at the last minute, the Germans lost millions of man-hours and untold quantities of materials in changing their minds. They first started on a program of dispersal, for oil plants and other critical industries. They actually constructed some plants in wooded locations. There was also a frantic effort to construct underground plants. The Bomb Survey says: "If strategic bombing did nothing but force the dispersal of the (German) aircraft industry it would have paid its cost . . . In the end dispersal defeated itself, because once transportation failed, it became impossible to keep final assembly plants fed . . ."

The Germans had the same difficulty with underground plants. They considered huge centralized plants underground, near major sources of materials, where all parts could be made in one central, safe plant, but they never achieved this goal. The report says, "Several German technical men say now that they had proposed that production be moved underground as early as 1940. But they were told that the war would be won before the plants could be built, and they were threatened with confinement in concentration camps for questioning the Reich's impregnability. The suggestion, nevertheless, was feasible . . ." In any case, the Nazis went from complete disdain to great programs of underground building, and time ran out on them. And lack of preparation chased the building industry from one rush job to another.

The booklet on plant protection has this to say about underground construction: "The best protection against the blast and radiation can be provided underground. Dead storage of plans and records, spare equipment, jigs and fixtures in an existing mine is practical and desirable, and the maintenance of satisfactory humidity conditions in a closed space is not expensive. When suitably located, mines may be used for emergency medical facilities or storage of medical supplies, reserve fire equipment and similar purposes.

"In Europe, hydroelectric power plants and manufacturing facilities have been put underground at remarkably small increase in cost partially offset by re-

duced maintenance. Studies in this country have shown that underground manufacturing plants would be practicable and that there are many existing mines with drift entrances suitably located with respect to transportation and labor for such use."

To date the idea of underground plants has been rejected for America, that is, by defense officials who have looked into it. The whole question is, of course, complicated by considerations of transportation, though perhaps as mobile a nation as America might manage transportation better than Germany. To date, though, official Washington seems to lean to dispersal as the best defense for new factory construction.

#### *Defense Considerations in New Design*

While it is generally accepted that normal factory construction cannot be made completely safe against bomb attack, the whole subject needs close study, for obviously there are various degrees of protection to be achieved by proper design of framing and wall and roof construction. The task of sorting out the several possibilities is largely yet to be done. The recent report, "The Effects of Atomic Weapons," gave certain engineering generalities, and the A.I.A. has a committee helping to prepare a more detailed manual for engineers. Presumably further guidance will be forthcoming before long. As of now, however, the whole subject remains in the category of a challenge to designers.

#### *Defense Challenge For Architects and Engineers*

Now that America is fast becoming defense conscious, it is apparent that the design professions will be called upon to meet their own challenges. They are, of course, already doing so. But to date most of the attention has been on defense measures for the civilian population, and little has been heard about protection of our industrial productive capacity.

For the present, then, certain challenges stand out:

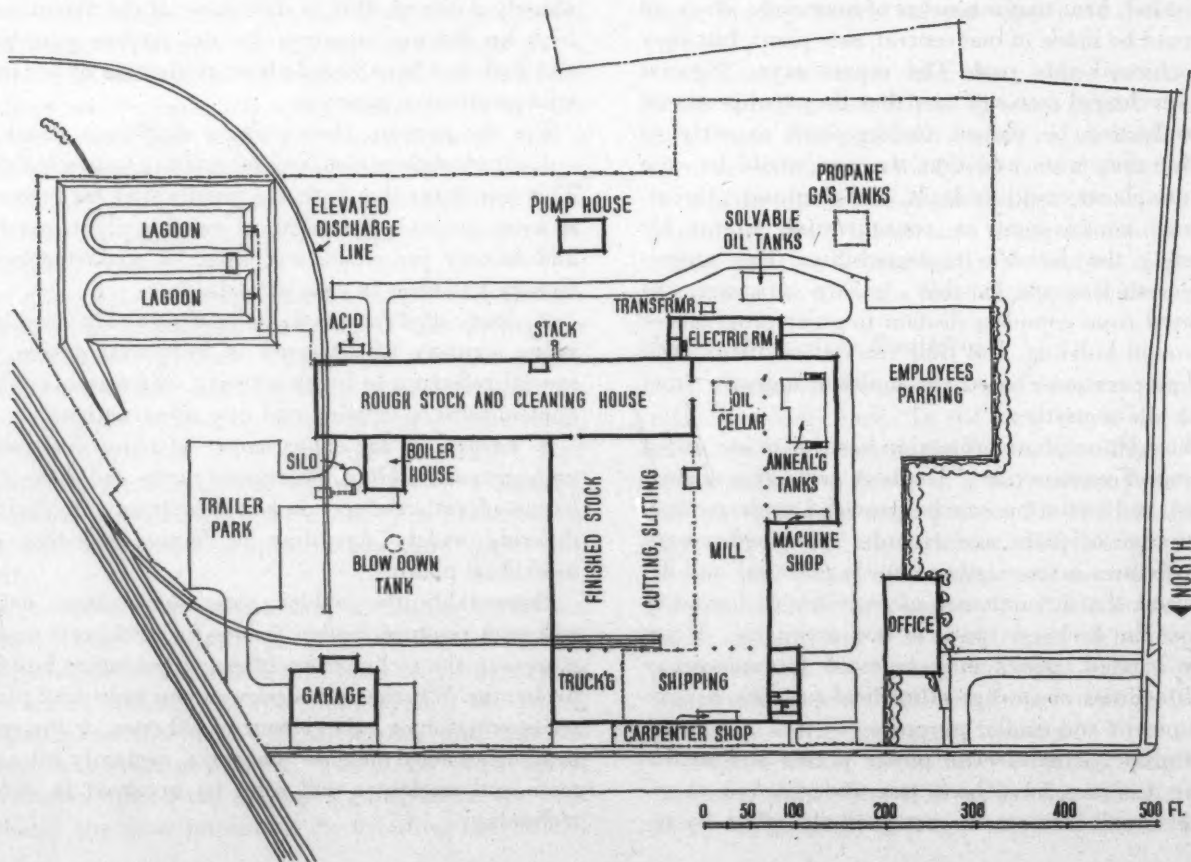
1. *Study defense measures for existing factory buildings.* This would involve both the possibilities for increasing in some measure the safety of existing plant, machines and factory personnel, and those of reconstruction of factory buildings in case of raids.
2. *Study of defensive building design.* This would involve scrutiny of all types of industrial design with special reference to bomb security, and results could be applied both to existing and new construction.
3. *Surveys of the entire matter of plant dispersal vs. underground building.* This might in the end shake down to consideration of certain key industries, with decisions differing widely according to factors affecting each individual plant.

Presumably the sudden seriousness about defense will soon produce further guides for architects and engineers in the technical problems of preparing buildings for bombs. Whether it is design of new industrial plants, reconstruction or enlargement of old ones, or the spearheading of local defense measures, certainly all architects and engineers will soon be involved in defense technology.





Aero-View by Irving V. Tier

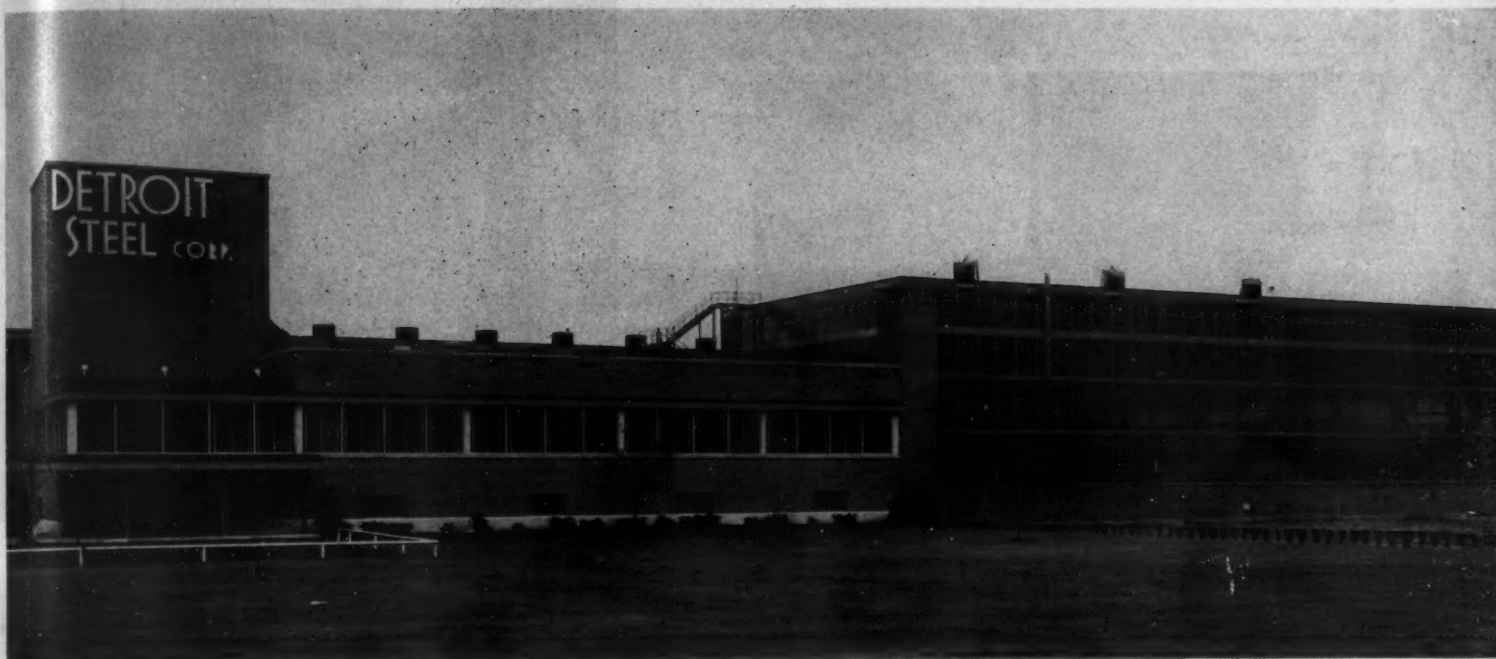


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## FINISHING PLANT FOR DETROIT STEEL CORP.

WHILE the processes in a cold roll strip mill might not seem especially conducive to architectural esthetics, this plant exemplifies the now-familiar observation that modern architecture achieves its most unquestioned success in industrial buildings. Here elements like great crane bays, continuous picklers, temper mills, huge areas of fenestration, seem to assert themselves on the architect's board. Perhaps the design is not as easy as it thus sounds, but at least such strong elements leave little room for confusion as to the meaning of "function" in design.

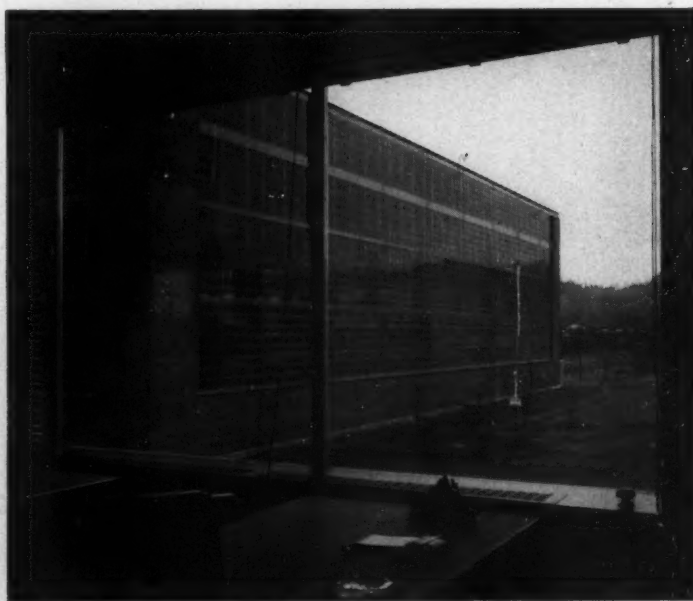
Functionalism in this plant is of a high order, both technically and economically. The project was conceived in economic reasoning quite typical of these times, pointing up need for a plant for secondary processing combined with warehouse and shipping facilities to serve a certain market. The architect persuaded his clients that Hamden was the logical location, then studied with them the processes involved, until the new plant now represents a high standard of efficiency.

Thus from its reason-for-being, through the study of processes in search of new savings, and on to its final appearance, this plant is a typical example of the kind of industrial expansion which may be more and more expected in years to come.

*Strip Mill and Distribution Center, Hamden, Conn.*

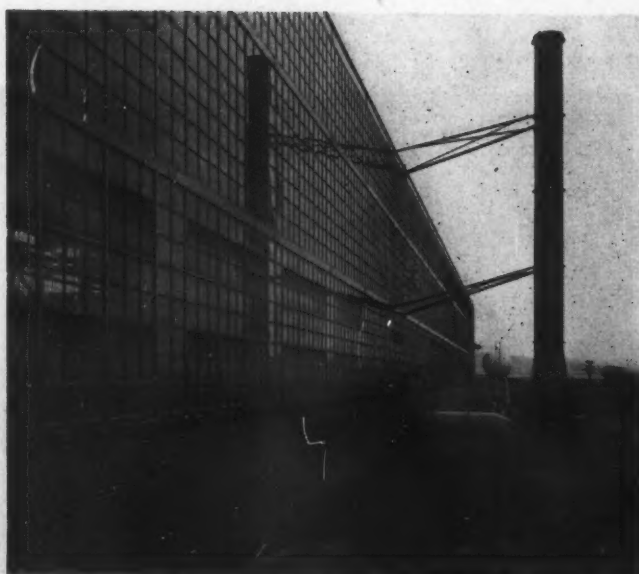
*Leo F. Caproni & Associates, Architects and Engineers*

Joseph W. Molitor Photos





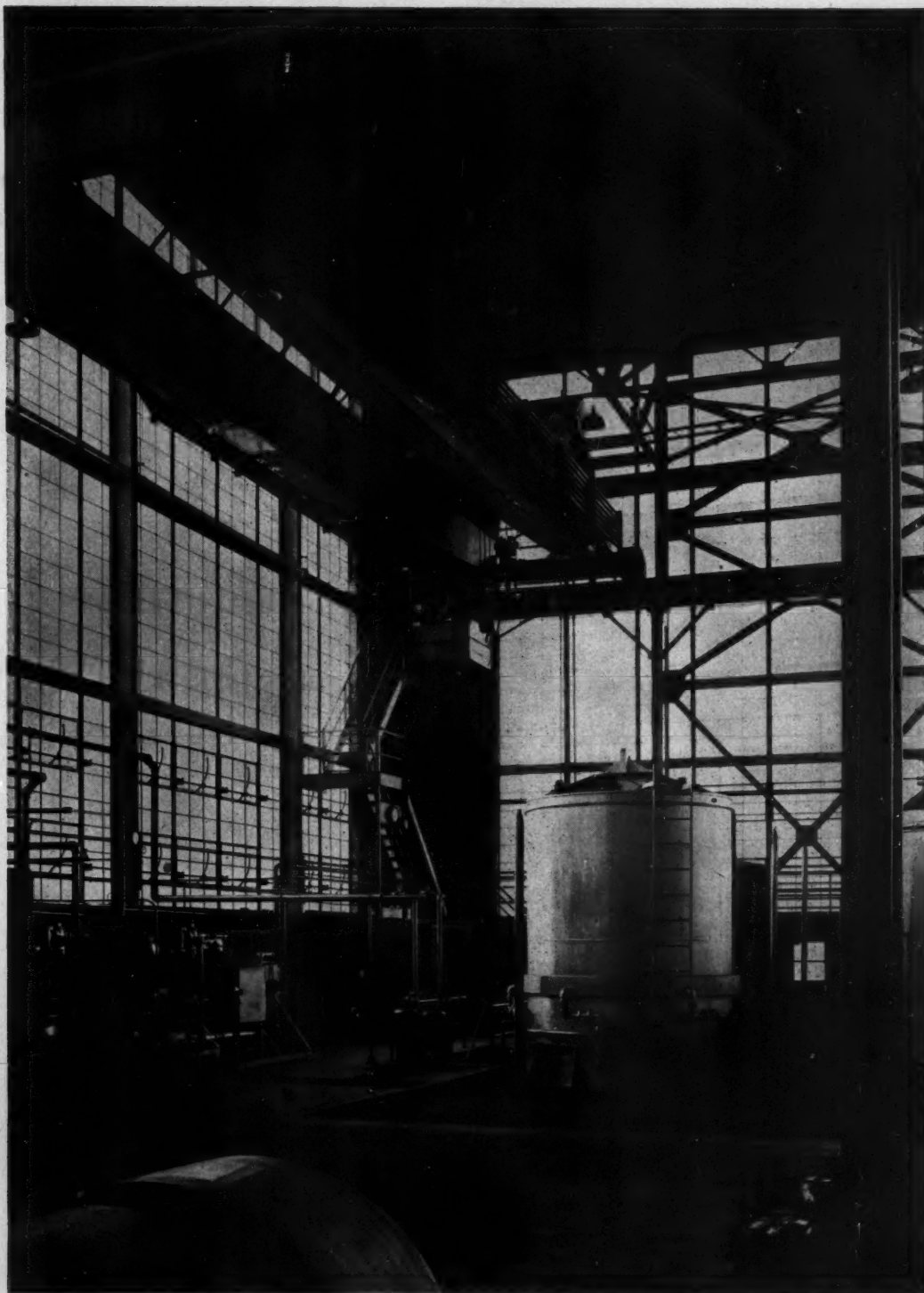
Joseph W. Molitor Photos



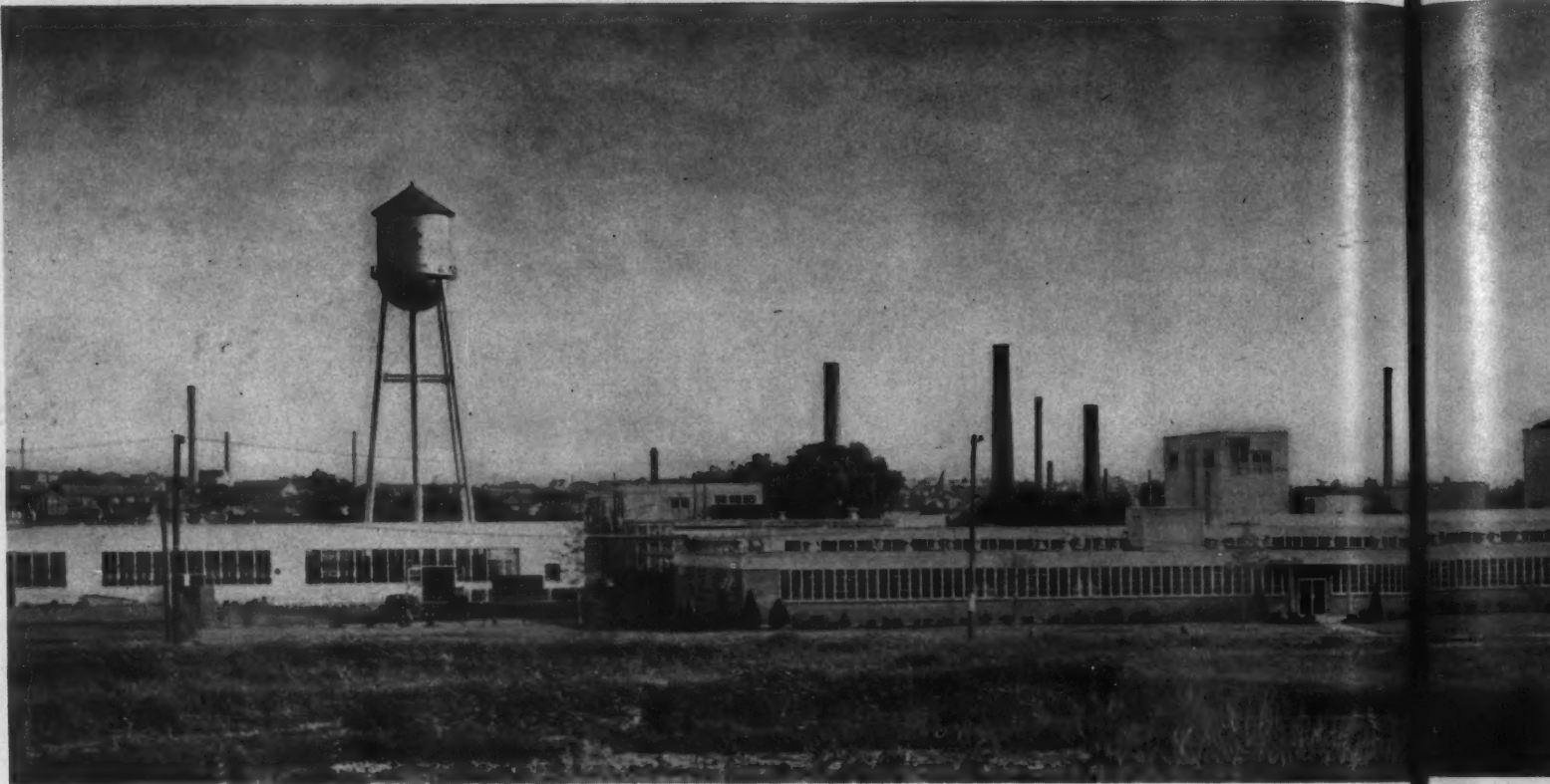
Leo F. Caproni Photos



Main plant building takes its design from requirements for heavy crane capacity, up to 20 tons, and for freedom of crane movement. Spans here are 80 ft without columns. Building is 50 ft high, again to allow for crane movement, also for light and ventilation. High steel sash are set outside of columns to give continuous fenestration. Building is designed on module system for expansion in any direction







Gottscho-Schleisner Photos



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## NEW PLANT FOR TEXTILE DYE AND INKS

*Manufacturing Plant for Interchemical Corporation, Hawthorne, N. J.*

*The H. K. Ferguson Company, Industrial Engineers and Builders*

WHILE THE PROGRAM for this plant was fairly typical of clients' requests, the solution was unusual in the degree to which economy was achieved. Economical steel design, curtain walls above windows, concrete block walls in many instances, all were important savings.

The new plant brings together in one location some textile dye and ink processes previously in scattered plants. There are seven buildings in all, all but one of single-story height, occupying a site 960 by 1000 ft along the Passaic River.

In the design of the steel frame the engineers took all possible advantage of the principle of cantilever. They also used a lightweight, welded steel roof deck. Purlins are welded to roof members, and the wind load is thus

transmitted through the roof to all columns. Altogether, the design cuts the weight of steel substantially in comparison with conventional design. The weight saving was sufficient to permit the use of pipe columns in place of structural steel shapes. By now weight savings had accumulated to the point of keeping the footings smaller than would be necessary for more orthodox steel design.

The typical wall design is such as to produce savings both in cost of materials and in erection time. Masonry work and framing both were held down by using brick masonry only below the windows, with corrugated aluminum siding above, while retaining the advantages of masonry below the windows. Structural columns are recessed several inches from the outside wall to permit



Gottcho Schleiner Photos

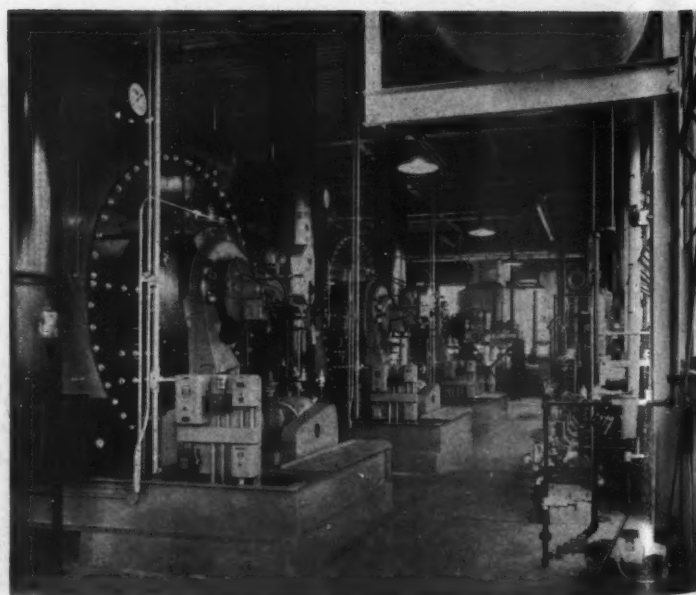


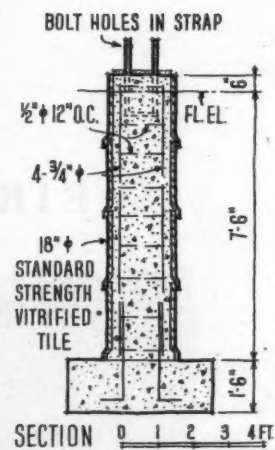
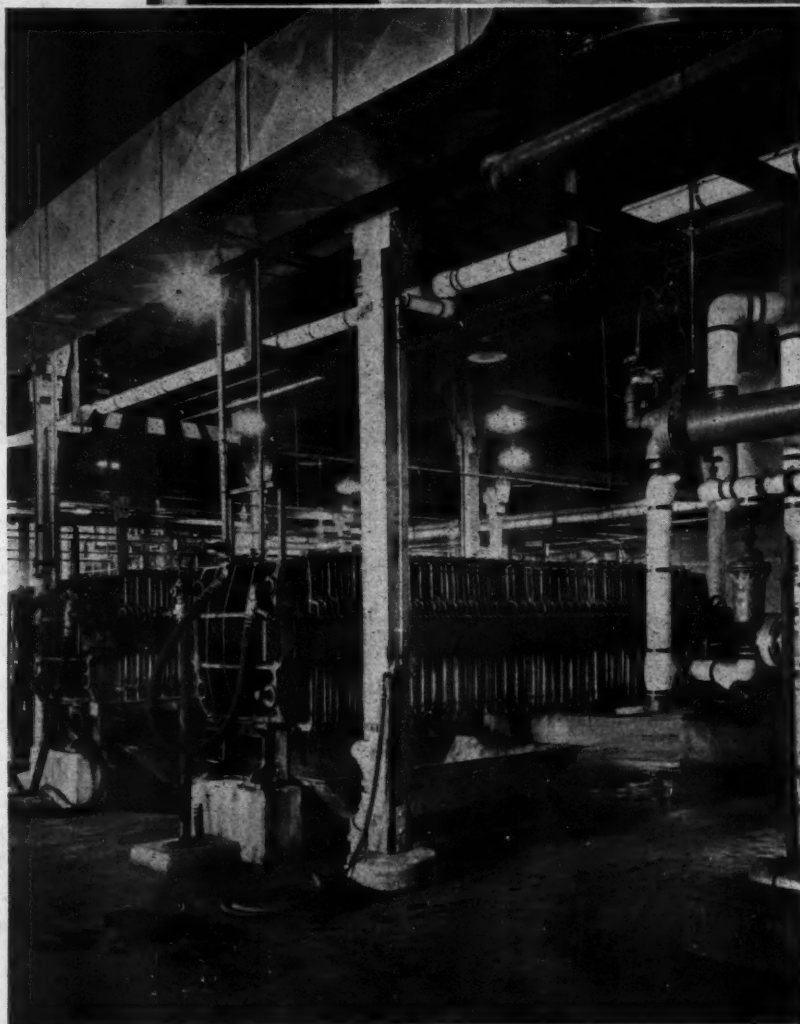
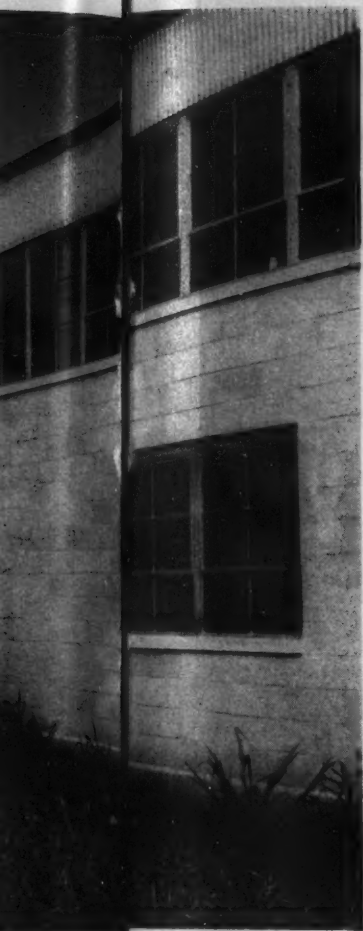
continuous sash. The result is an attractive wall, erected quickly at low cost.

Buildings not facing directly on the highway have concrete block walls, a band of continuous sash, and aluminum siding above, again for weight savings, ease of erection and low cost. The one four-story pulverizing building uses aluminum siding for all except the ground floor, placing reliance on the reflective insulating value of the bright surface to prevent heat losses from becoming excessive.

In the dye plant, where acid fumes are given off in the chemical reaction, wood columns are used instead of the steel pipe columns, because of the corrosive action of the acid used. Footings under these columns are enclosed with glazed drainage tile to protect the concrete and reinforcing steel from acid seeping into the ground (detail page 139). A rather incidental economy measure was the dual use of drainage tile as a fume exhaust for heavy gases as well as drain. Fans at a remote point maintain a suction at the drain opening, and also carry fumes from the drain tile into a stack.

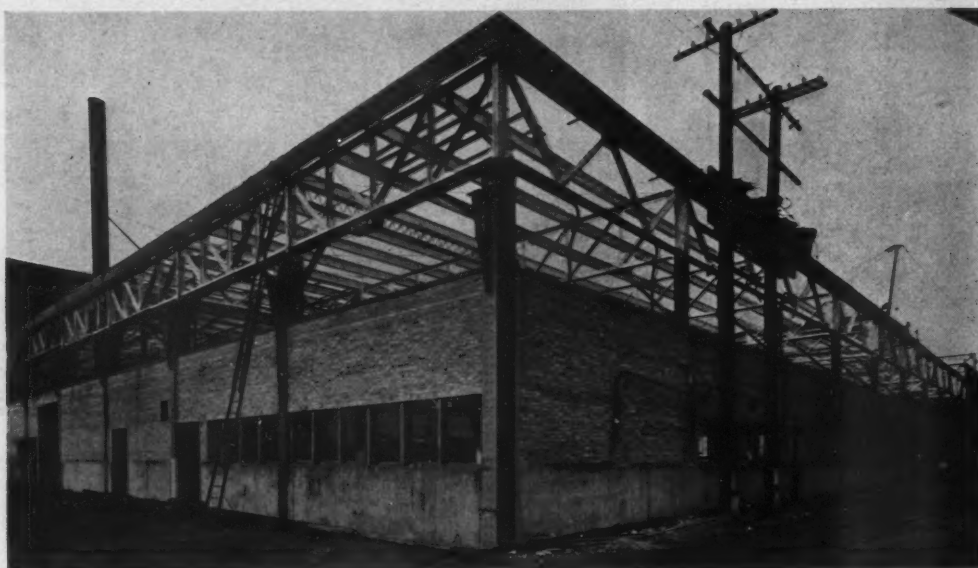
The site was chosen to provide plenty of expansion room, and each individual building was planned to permit addition without serious disturbance, in fact some have demountable end walls ready for removal.





In most of the buildings the structural system uses simple steel pipe columns (upper photo); in the dye plant wood columns are used instead, because of corrosive action of acids used (lower photo). Footings are enclosed with glazed tile to protect concrete and reinforcing steel against acid seeping into the ground (detail, right)





## FIRST-WORLD-WAR PLANT REMODELED

*Alterations to Sun Steel Company Shop Building, Chicago*

*Walter H. Sobel and J. Steward Stein, Architects and Engineers*

ORIGINALLY a war baby, this plant was abandoned between conflicts and now has been remodeled for further war-time production. Oddly enough it was built by the government for the First World War, not the Second, and now finds new usefulness in the current expansion of steel fabrication industries.

Unoccupied for many years, the building suffered considerable deterioration. Without heating and proper maintenance all of the wood construction decayed and rotted. Surprisingly, because of a fine film of factory sand which was deposited over all of the inside steel members, very little rust damage was found.

In the remodeling, the continuous monitor skylights

were removed, and all wood purlins replaced with steel. Some 100 tons of steel were removed from roof and walls and reused in framing the new roof. All of the exterior frames were salvaged for new corrugated glass openings. The new roof is a poured gypsum deck over plasterboard, with 20-year bonded roof.

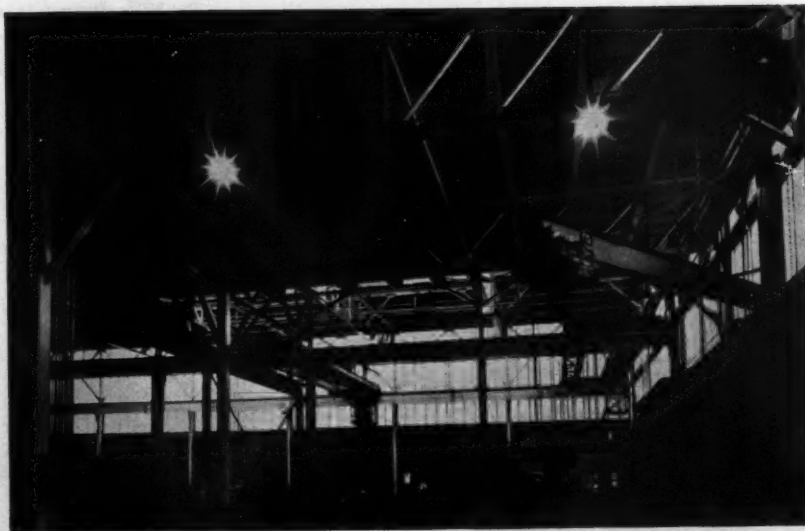
The old building was totally inadequate in heating and various services. Heating had been supplied from a central plant some thousand feet away. Now the building has its own boilers and a new installation of unit heaters. Ventilation was also provided, meeting code requirements. The electrical service also is new, with a 440-volt 4-wire service and distribution wiring.

Chicago Architectural Photographing Company Photo



The long-unused building was also found inadequate as to employees' facilities; accordingly, the modernization included new offices, locker rooms, toilet facilities, and so on. Also, provision was made on the second floor of office section for future installation of dining room and recreational facilities

Leonard Photo





# CHARACTERISTICS OF DOWNLIGHTING

By Stanley McCandless\*

B. Altman, Manhasset, Alfred Hopkins Assoc., Architects. Richard Garrison Photo



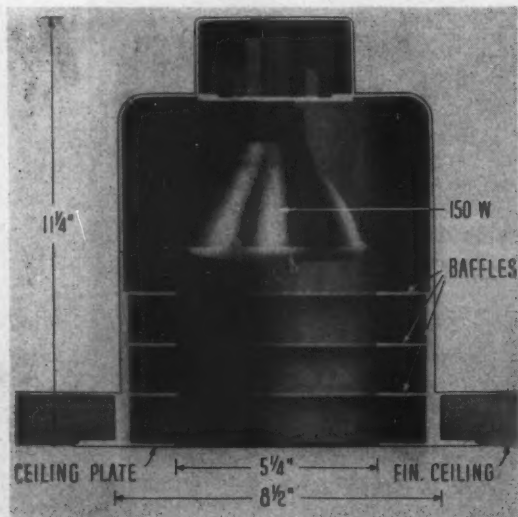
1. Reflector Lamp Downlights. Optical control is in the lamp. The hood consists of baffles or louvers to cut down internal reflections and to eliminate view of the lamp. It generally requires a relatively large aperture—larger than the lamp—for bottom access. This is the simplest type that has less than a 90-degree beam spread and at the same time a high efficiency. (Efficiency is expressed as  $\frac{\text{fixture output}}{\text{lamp output}}$ )

A. Horizontal baffles eliminate brightness inside hood and make brightness of the ceiling port nearly match the ceiling. Projector flood lamp gives 54% efficiency. Not recommended for ceilings less than 12 ft.

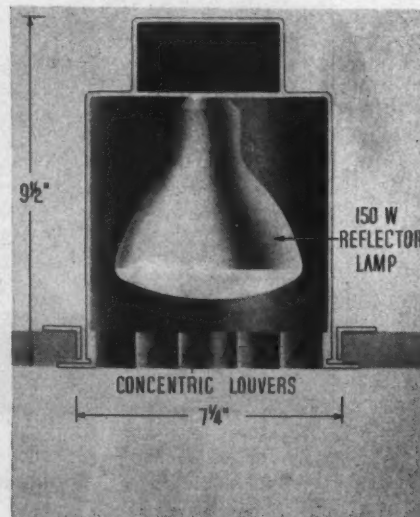
B. 45–60% efficiency depends on degree of cutoff provided by louvers.

C. A low-output, soft-edge illumination unit, requiring only a 1½-in. port. The 30% efficiency is justified by need for a small port and low intensity in night clubs, etc. Not recommended for ceilings over 12 ft.

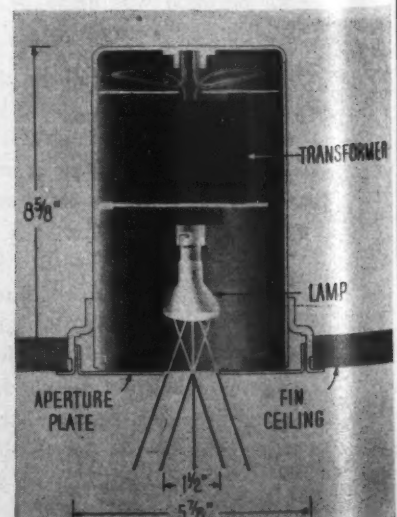
1A Baffle Can



1B Louvered Can



1C Pin Hole Unit (R-12)



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**T**HE beginning of "downlighting" reaches back in the history of architecture. The Egyptian temple with a large open square in the roof, the Greek temple with translucent roof tiles, and the famous oculus of the Pantheon in Rome, all gave an effect somewhat similar to present-day skylights. The increasing use today of the effect of illumination from skylights and ceiling ports, but achieved with artificial light, makes a subject of considerable interest.

There is a constant search for various means of artificially lighting a room through ports or panels in the ceiling. The objective is to provide illumination at the working plane or circulation level (without lighting the ceiling, sometimes without lighting the walls of a room) by sources *partially* or *entirely concealed* within the ceiling. Direct lighting from above — downlighting — can provide visibility of objects at the working plane independent of reflected illumination from the walls and ceiling.

This discussion is concerned only with the great variety of incandescent units which direct their light downward through ceiling ports individually or, more usually, as a group to provide gen-

*\* Professor of Lighting, Yale. Development & Research, Century Lighting Co., N. Y. City*

eral illumination at the working plane. Skylights, louvered ceilings, troffers, coffers and indirectly lighted ceilings are omitted. Accent lights, used individually to illuminate specific objects, are likewise not included.

### Supplementary Lighting Needed

When used as the only source of illumination (particularly where light is kept off the walls and ceilings) downlighting generally creates a dim, mysterious, or even dramatic atmosphere. Where such an effect is not wanted, a little general or indirect illumination on the walls and ceiling is required.

With certain types of downlights, which, when used alone, appear bright in the normal line of vision, it is best to use some other sources to light the ceiling to reduce objectionable contrast.

Perhaps only in churches, in specialty shops, or other places where dramatic effects are desired, should downlights be used as the sole source of illumination. In some instances, where the surroundings are light in color and the ceiling is low, there may be sufficient reflected glow to illuminate the ceiling without using supplementary indirect lighting.

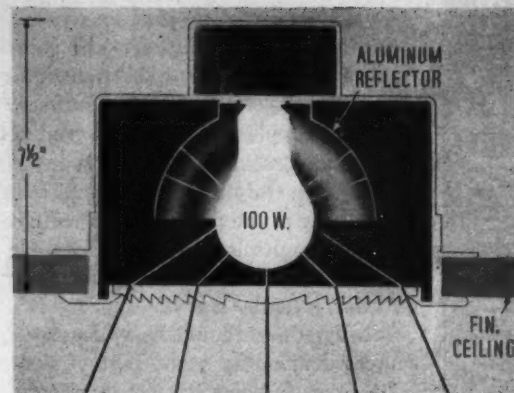
2. Generally the flush plates are flat Fresnel lenses or diffusing glass, either square or round, ranging from 3 to 20 in. across, with 25 (narrow beam) to 60% (wide beam) efficiency for lenses, 70% for diffusing glass. These plates are characterized by high surface brightness in the normal line of vision. It is possible to determine the beam spread by the position of the lamp. Also it is pos-

sible to produce an asymmetrical beam by offsetting the lamp up to about 25°. There is always considerable candle power outside the rated angle of spread. This means high light output and even illumination with wide spacing, but it also tends to create high brightness. Risers can be opaque to cut down high brightness in the normal line of vision without affecting the useful output unduly.

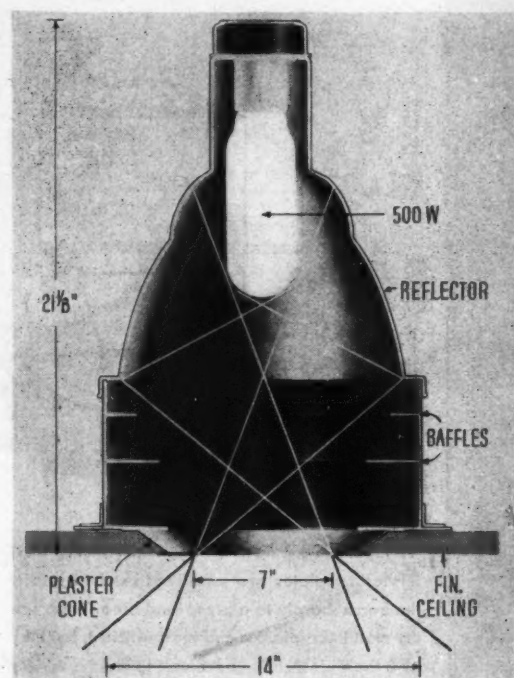
3. Downlights with Integral Reflector redirect rays from a standard service lamp (generally) downward through a ceiling opening. Direct emanation is mostly eliminated by louvers or baffles. Distribution from these units is well within 90°, so there is very little brightness in the normal line of vision. The ceiling port is somewhat larger than most architects desire except where the ceiling is high (over 25 ft).

A. Medium spread, 40% efficiency. Baffles eliminate bright side walls in the can. 200-1000 watt sizes. Ceiling port from 5 to 7 in. in dia.

B. 55 per cent efficiency. Ideal for group installations with low ceilings. 40-100 watts with a 5-in. port. 150-300 watts with a 6-in. port.

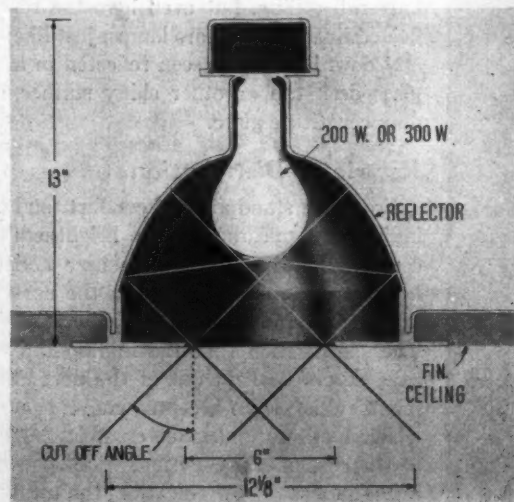


2 Flush Ceiling Plate Downlight



3A Ellipsoidal Reflector in Can with Baffles

3B Open Ellipse Reflector, Standard Lamp



### TYPICAL DOWNLIGHTING DATA

Performance for 1c with 20-W, 30-V, reflector lamp

Ceiling height, ft	8.5	10	12	15
Maximum spacing, ft	4.8	6	7.5	10
Average foot candles* maintained, large room	3.6	2.3	1.5	.7
Average foot candles* maintained, small room	2.5	1.6	1	.5
Diameter of area lighted by a single unit†, ft	6	7.5	9.5	12.5
Maximum foot candles	8.2	4.4	2.7	1.6

\* At working plane 30 in. above floor  
† Illumination at edge of beam, about 20 per cent of maximum



### Multiple Units Needed

Individual downlights act like point sources in that they cause sharp shadows and reflected glare from shiny surfaces. Prolonged application, such as reading under a point source (pin spot) is apt to be fatiguing. Only by having a sufficient overlapping of the pools of light, so that there are multiple, scarcely discernible shadows, does the effect approach the diffusion given by a skylight.

Ideally, there should be at least ten sources distributing some part of their light to each point on the floor area, except where the task is casual and shadows or reflected glare are unim-

spread of light downward generally should not be more than 45 degrees on each side of the vertical axis of the fixture. (The viewing angle is arbitrarily assumed to be directly ahead, downward, sideward, and upward — but not more than 45 degrees above the horizontal.) Spacing which will produce ten overlapping pools of light with a low ceiling increases the number of units to such an extent that wiring becomes an important factor in installation cost.

### Advantages

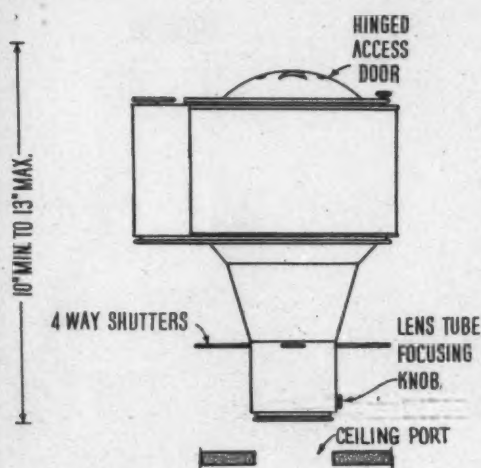
To offset the possible additional cost of downlighting compared with other

important areas and objects such as sculpture, pictures and tapestries.

### Intensity of Illumination

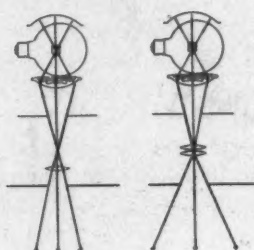
The amount of light in terms of foot-candles on the task can be of threshold quantities, because there need be no competition from other visible sources or bright areas. Some recently published performance data \* can be used to guarantee effective vision, provided there is no distracting reflected glare and there is adequate light in the surroundings. Roughly:

\* Illuminating Engineering, Vol. XL, p. 765



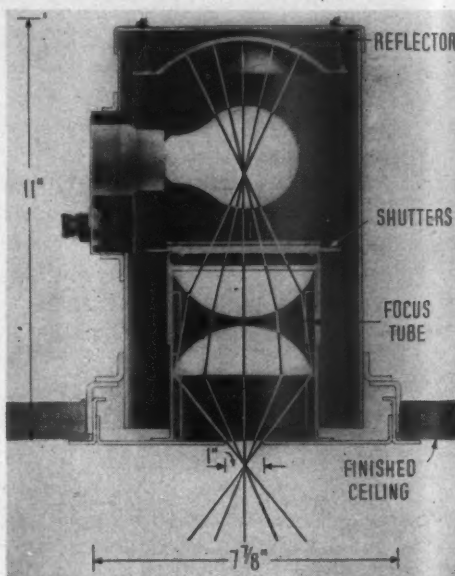
4. Optical Downlights (Pin Spots). Framing shutters or templates are sometimes used to restrict the beam sharply to a prescribed area. These are the most inconspicuous and least efficient, but they give the widest range of control to meet a variety of conditions. They are usually used individually to light specific areas, such as tables, with low-level illumination.

4A Pin Spot



A. Sizes range from 100-400 watts, generally using a 2-in. dia. lens. With one, two and three lenses, corresponding efficiencies are 5, 4.5 and 3.5%. With the framing shutters closed in, the efficiency may be less than 1% if the lens combination produces a beam much wider than is necessary. Has the most precise control of all three units in this group.

4B Pin Point



B. Pin point unit has the simplest optical system. The aperture can be less than 1 in. dia., but the efficiency is less than 10%. Limited to applications with low level of illumination.

portant. This is a great advantage of a louverall ceiling, but even here the reflected image of the bare lamps, just like any downlight when seen reflected in a glass desk top or other shiny surface, may constitute glare.

### Restricted Distribution

From the standpoint of comfort, and indirectly appearance, the brightness contrast between a ceiling source and its immediate surroundings in the normal line of vision should be a minimum. The specification that the illuminating rays should be kept out of the normal line of vision is an accepted convention which tends to guarantee comfort, but at the cost of efficiency and wide spacing. To meet this specification, the total

methods of illumination, there are several features to justify it. Due to eye adaptation to the general low brightness of surroundings and to the almost complete absence of bright sources in the normal line of vision, lower levels of illumination will generally give a greater sense of visibility.

From the standpoint of composition or design, the greatest brightness can be that of the most important object — generally the task — and the visual pattern will not be distorted by competing brightnesses in the form of fixtures or large brilliant areas of wall or ceiling.

Also where downlights provide utility illumination for circulation — reading or writing — the designer is free to use additional light decoratively to accent

(a) 5 foot-candles is adequate for circulation and general auditorium illumination

(b) 15-20 foot-candles is a minimum for note taking and general sales areas

(c) 30 foot-candles for good selling light

(d) 60 foot-candles and up, for critical seeing.

### Color

Color enters the picture indirectly in that a general atmospheric tone in a room can bathe the surround without affecting the white light on the task. If color in the downlight is desired, it should be a tint rather than strong color, except for decorative reasons. A double layout of downlights, each set of

a different tint, would permit a change from cool to warm.

### Distribution

Varied forms of downlighting distribution ranges from so-called "pin spots" with sharply restricted beams, to groups of wide angle units giving overlapping pools of light and approaching the diffuse effect given by a skylight.

The illustrations show typical downlights. Each type has similar optical equipment which in some cases can be changed to give a range of distribution. The effect of one and two lenses, for example, is clearly indicated in Fig. 4A.

difference of 80, 75, even 50, can be used because other variables also enter the picture. The recommended spacing of a particular downlight (1C) is given in the table.

### Control

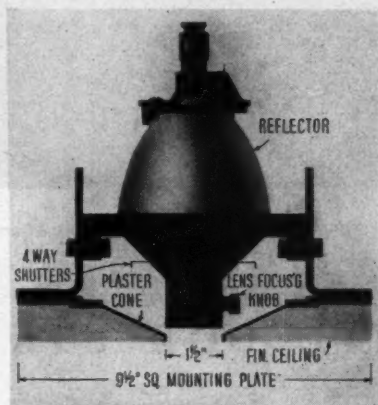
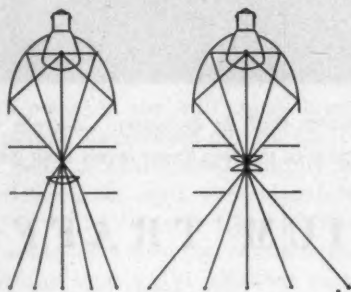
A further refinement in downlighting occasionally used in churches and auditoriums is provided by dimmers and automatic changers for coloring and shaping the beam. Ballrooms devoted to all manner of gatherings — banquets, bridge parties, lectures, musicals, dances — can be adapted most effectively by varying the intensity of downlights,

ing from above or below the ceiling must be provided. In high rooms, ceiling space with catwalks is practically a necessity. Where small apertures (smaller than the lamp) are desired and the only access is from below, a hinged ceiling plate or a removable type with a bayonet lock is required.

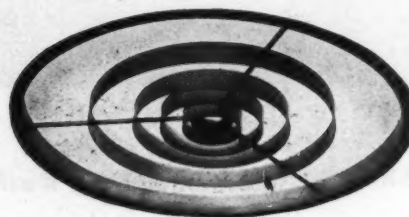
### Efficiency

Maintenance cost should include power consumption. This is almost inversely proportional to the efficiency of the instrument. Invariably, the greater the control or restriction of the beam, the less efficient the device is from a

4C Ellipsoidal Reflector Spotlight



C. Made in sizes from 50 candle power to 2000 watts with a 1½-in. to 8-in. aperture. Beam spreads between 20 and 80°, depending on the focal length of the lens combination. Corresponding efficiencies are between 15 and 40%. They can be equipped with framing shutters which shape the beam precisely, or they can be thrown out of focus to give a soft edge. In large sizes they require up to 3 ft of mounting space.



5. Flush Dome Unit. (60 to 500 watt silver bowl lamps.) The surface brightness of these units is high—particularly where the neck of the lamp is not shielded. They give a wide, soft-edged light distribution.

In the actual instrument, 100, 250 or 400-watt lamps can be used interchangeably. For the most part, though, each unit is limited to one size of lamp and fixed optical equipment.

### Spacing

Generally speaking, any downlights properly spaced can give good illumination on horizontal surfaces, but it is only with wide angle downlights, closely spaced, that vertical surfaces can be illuminated satisfactorily. Proper spacing to provide the degree of evenness of illumination desired depends on the ceiling height and the distribution of the individual unit employed. Absolutely an even illumination is never achieved, so that a tolerance in terms of a percentage

down or up to give the desired level of illumination for each function.

Color change in its simplest form — from warm to cool, two circuits — has uses where atmosphere is an important factor. The three lightly tinted primary colors under separate dimmer controls, will provide varied effects of almost the whole spectrum. There are a few instances where remote control of an iris or different shutter forms have been used to shape the beam — for example, over a dining room table to conform to various sizes and shapes.

### Access

Inasmuch as most downlights are wholly built into the ceiling, some simple means of access for relamping and clean-

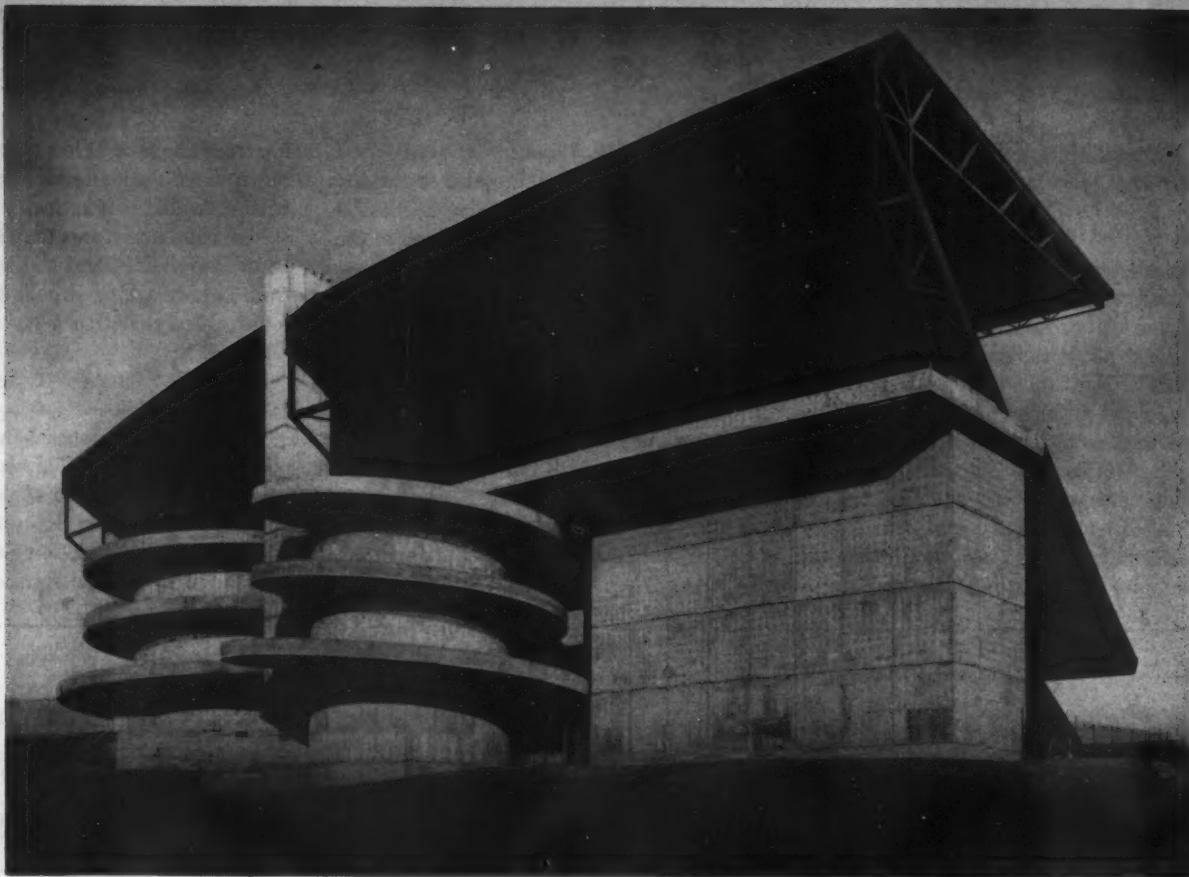
strictly economic point of view. Efficiency of effect, however, must always be weighed with the economic aspect for each particular use. The only rational way to obtain comparable costs for a particular application is to consider all downlights which will give the same visual effect. Brightness in the line of vision, foot-candles of illumination, color, beam spread cut-off, size of ceiling port, and control features such as shutters, mats and funnels are factors to consider first. Next comes quality of construction. Then you can select the one with the most efficient output.

If the visual effect, due to the selection of too wide a beam, causes glare, and if the use of too few units causes dis-

(Continued on page 160)



Kenneth S. Brown Photos



Central theme is the circulation system: two spiral concrete ramps with an elevator shaft in between. Concrete walls, forming an apparent base, double as stiffeners and earthquake walls, and protection of the two lower levels from weather

## SPIRAL RAMPS FOR STADIUM TRAFFIC

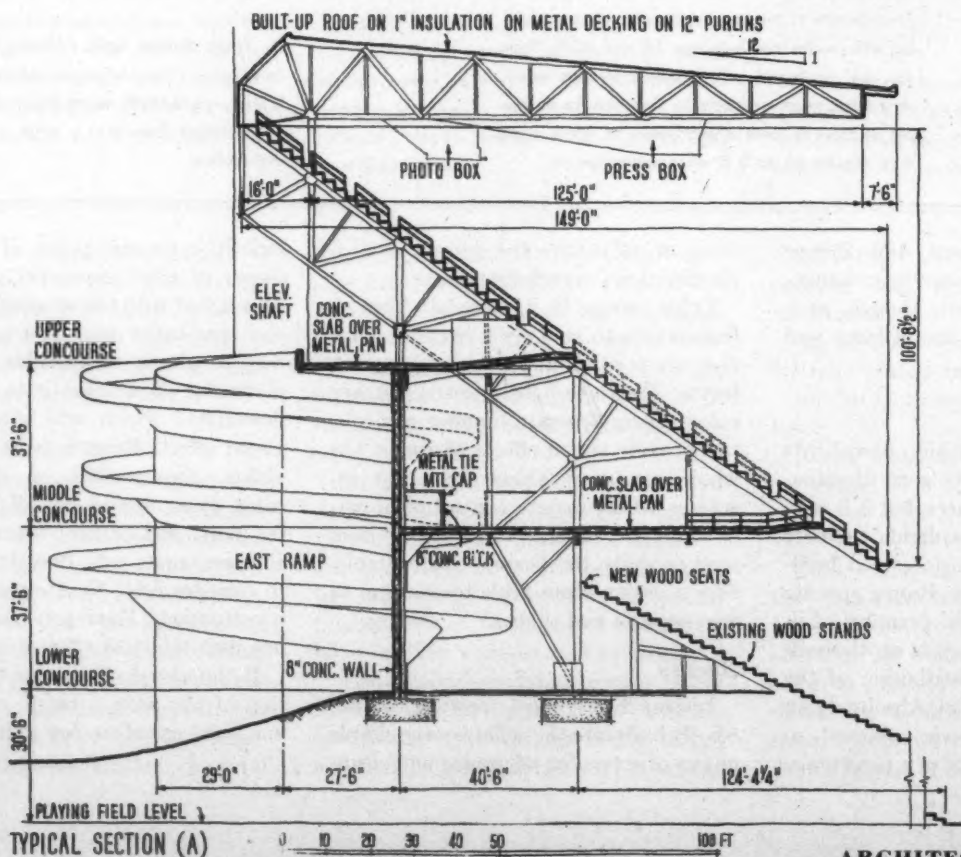
Stadium Addition, Univ. of Washington, Seattle

John Paul Jones, Supervising Architect

George W. Stoddard & Associates, Architects

S. Ivansson, Structural Engineer

Strand & Sons, General Contractor



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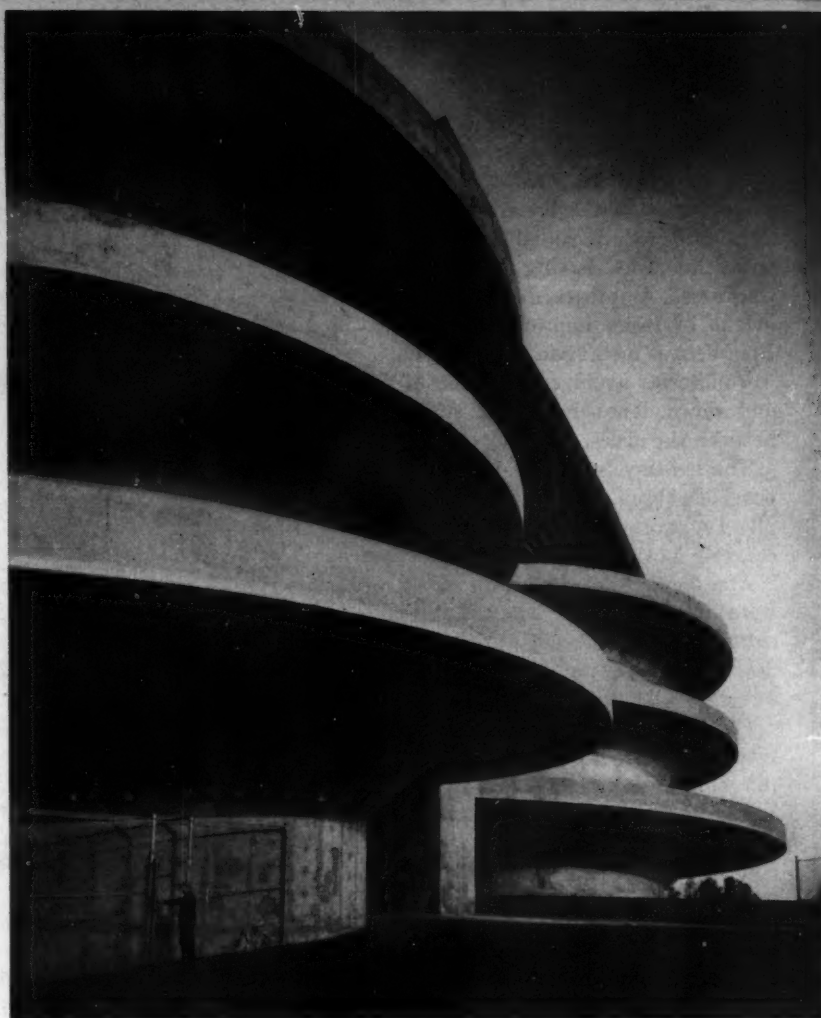
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**T**HE architect's problem was to provide 15,000 additional seats (bringing stadium capacity to over 55,000) with a roof protecting as many seats as possible.

Due to the stadium's lake-front location, traffic can flow in only one direction; thus, multiple means of egress would be overloaded toward the flow direction and unused in the opposite. One grand ramp spiraling up to the various levels would have been desirable, but the architect's analysis proved that two were more practical.

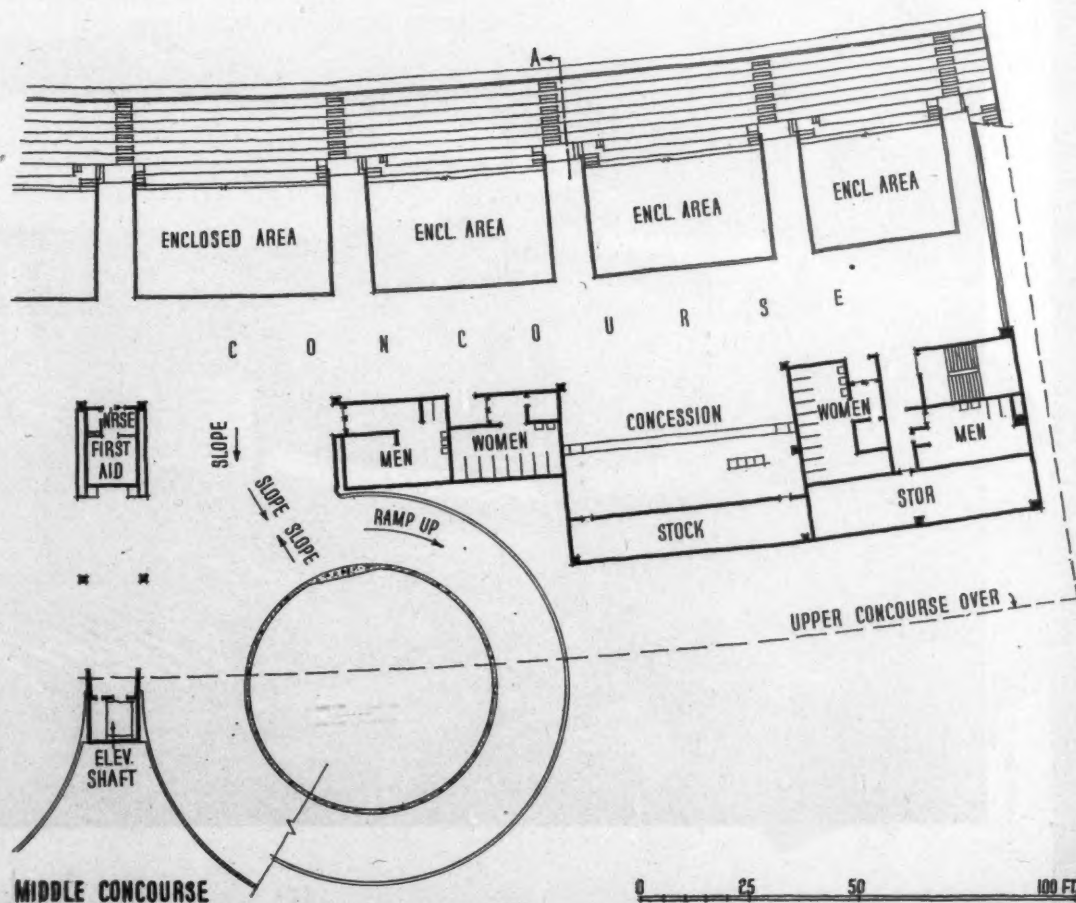
Spectators with seats in the upper deck (or balcony) walk through a special entrance onto a common ramp which then divides into two cantilevered ramps, all of reinforced concrete. In two full turns, customers reach the middle concourse level. Here, those with seats in the lower half of the balcony go to one of nine tunnels to reach their seats. For seats higher up, they continue up the ramps to the upper concourse. Turnstiles at the foot of the grand ramp and at two points in the wall at the lower level permit unrestricted movement.

By using a cantilevered balcony of welded steel, the seats were placed 30 rows, or 75 ft, closer to the field than they would have been in a continuation of existing seats. Also, elevated seats have a better view of the field.



Ramps are large enough for trucks to go up and deliver supplies to concessions

Left: Public comment at first varied from appreciation to concern over design of the addition. Now, many of the season ticket holders have changed their request to sit in what have proven to be better seats. Frame is welded steel. Right: The plan of middle concourse shows how spectators reach seats from the ramps; left half is duplicate of the right





Balcony treads and risers are formed of  $\frac{1}{4}$  in. steel plate, welded into a continuous sheet. These are covered with a mastic to reduce sound transmission, with the aisles having an additional thickness. A progressive increase in height of risers improves sight lines. Roof deck is metal pan construction.

Vomitories avoid cross traffic of up and down lanes by being staggered between the aisles.

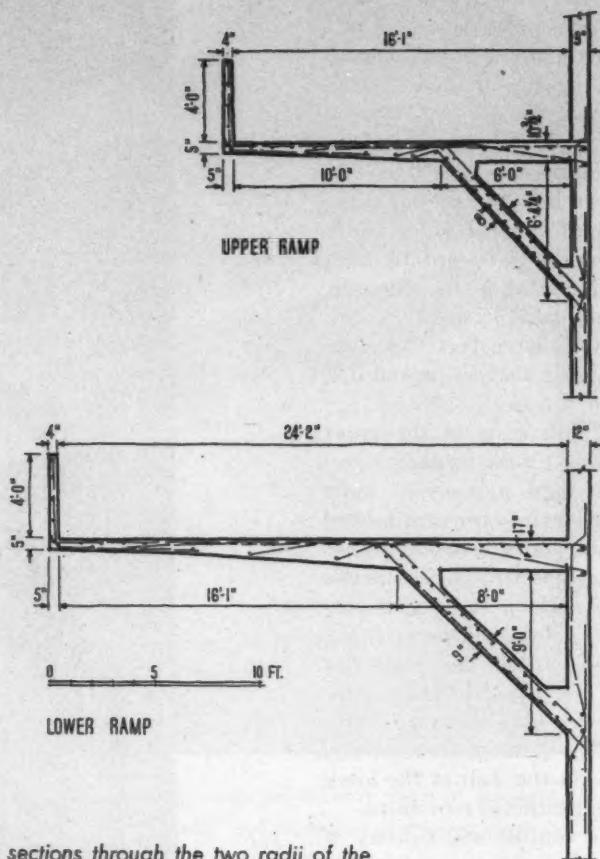
The balcony is split at the center to provide a through expansion joint. Steel piling supports the east half and spread concrete footings, the west.

Approximately 2500 tons of steel were used in the structure. Specifications for the concrete work called for use of an air-entraining agent. Ramp forms were of plywood.

Duplicate facilities for toilets, concessions and stores are symmetrical about the center on all three levels.

The 54-ft long press box has booths for radio announcers, a stadium announcer, coaches, the press and visiting scouts. The lower box provides for TV, photographers and cameramen.

Access to the press boxes is primarily through an elevator which has stops at all levels.



Above: sections through the two radii of the ramps indicate location of reinforcing

Below: concrete ramps as a means of circulation to the stadium addition were chosen because of the unidirectional traffic flow



Seattle Times Photo

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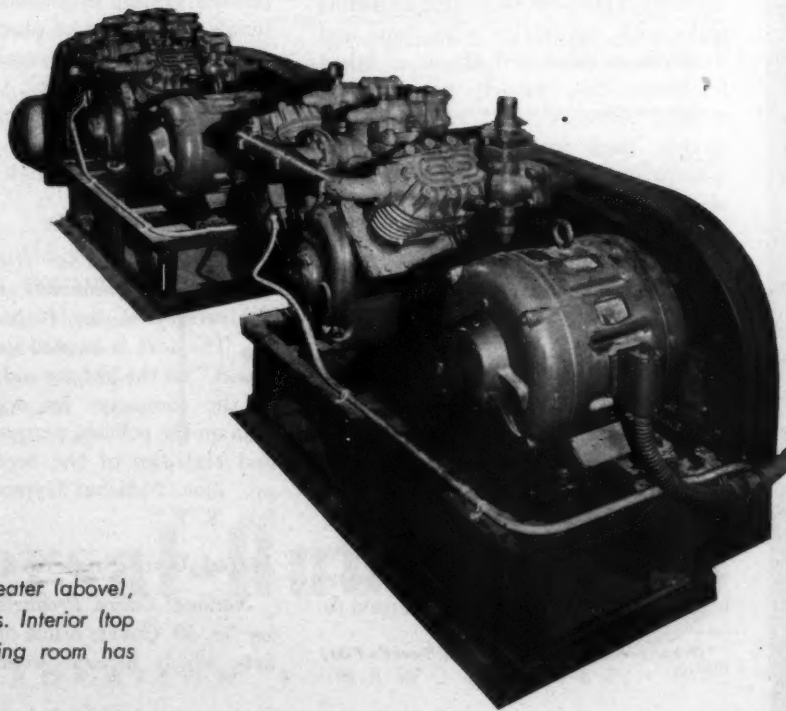
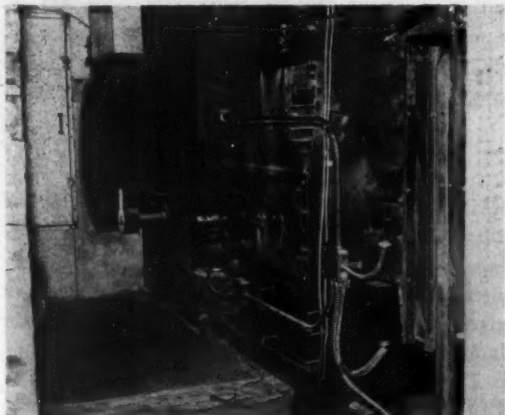
## PRODUCTS for Better Building

### *Heating and Cooling Plant for a Retail Shop*

A different approach to the problem of all-weather heating and air conditioning was employed recently in a new Bramson store in Evanston, Ill. The women's specialty shop uses a high-capacity, industrial type warm air space heater, in conjunction with a cooling coil arrangement. The same ducts are used for both heating and cooling. The system is reportedly very economical in initial operation and maintenance costs.

The main unit of the combined system is a *Dravo* direct, oil-fired warm air space heater, with an output capacity of 1,250,000 Btu per hour. This is located in a basement mechanical room, together with air blending chambers, dust filters, cooling coils, and two refrigeration compressors. The main blower is adjustable to increase air volume. The store is divided into three zones; varying temperatures are produced mainly by changes in air volume. Outlets are placed on or near the ceiling. A program clock and thermostats control temperatures automatically. Dravo Corp., Fifth and Liberty Aves., Pittsburgh 22, Pa.

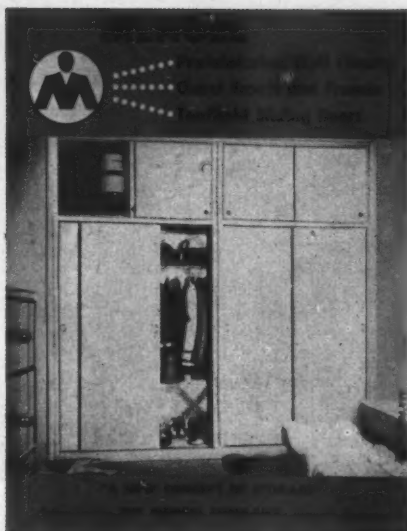
*(Continued on page 162)*



Economical all-weather conditioning system uses industrial heater (above), with two compressors (right) to supply water to cooling coils. Interior (top right) has combination lighting-diffuser fixtures. Each fitting room has outlet to maintain comfortable temperature



## MANUFACTURERS' LITERATURE



Cover of new brochure presenting a line of closet parts put out by Mengel Co.

### Storage

• *Mengel DeLuxe Kitchen Cabinets.* A Unique and Distinctive New Line of High Quality Wood Cabinets. Circular presents selection of kitchen units available in various combinations of base or wall cabinets. There are also single or double sinks with continuous work tops and available in laminated plastic or inlaid linoleum. Base models have sliding wooden drawers and, among larger models, there are deep metal drawers besides. Corner wall cabinets are designed to use L and U space in the kitchen. Wall-to-wall units also include a two-door (upper and lower) broom cabinet. 5 pp., illus. The Mengel Co., Louisville, Ky.\*

• *Mengel. Prefabricated Wall Closets. Closet Fronts and Frames. Topflight Sliding Doors.* "A New Concept of Storage." Described are types of prefabricated complete closets, and such component parts as prefabricated closet fronts, frames and sliding doors. Illustrations show the closets being installed in combinations of various lengths, and used to

\*Other product information in *Sweet's File*, 1951.

form partitions either between rooms or within a room. Installation details and available types are listed. 8 pp., illus. The Mengel Co., Louisville, Ky.\*

### Unit Heaters

*Fedders Unit Heaters.* Brochure presents features and applications of a line of overhead commercial and industrial unit heaters. Construction of the units is explained by a series of notes and cutaway illustrations. A number of charts give performance and dimensional data, along with general specifications. Also illustrated are a series of typical installations and other heating equipment made by the same manufacturer. 12 pp., illus. Fedders-Quigan Corp., Buffalo 7, N. Y. (This brochure was published as an advertising insert in the January issue of ARCHITECTURAL RECORD.)

### Plastics

*Plastics Research and Technology at the National Bureau of Standards* (Circular No. 494). Currently available is a summary of the activities of the National Bureau of Standards in the plastics field since 1917. The main topics of the booklet are: properties of plastics, testing of plastics, plastic materials, application of plastics, specifications for plastics, general information and German technology. A bibliography of NBS publications is included. 14 pp., illus., price: 15 cents. U. S. Government Printing Office, Washington 25, D. C.

### Gypsum Products

*With Faith In Their Hearts.* Book by Carl Halbak commemorating the 25th anniversary of the National Gypsum Co. The text is treated as a "progress report" on the history and development of the company. An appendix gives data on the policies, personnel, products and statistics of the organization. 72 pp., illus. National Gypsum Co., Buffalo, N. Y.\*

### Metal Mouldings and Grills

*National Guard Products, Inc., Catalog No. 50.* Covers a line of metal products which include weatherstripping,

mouldings, door grills and window guards. Each item is illustrated and described. A number have installation diagrams. Tools and accessories for use with the various items are also presented. 35 pp., illus. National Guard Products, Inc., 540 Jackson Ave., Memphis, Tenn.

### Tubing for Radiant Heating

*Bundy Weld Steel Tubing For Radiant Heating.* Pamphlet presents features of the tubing, and notes on its construction. Information is given on bending and joining the tubing, and on installations for floor and ceiling radiant panel systems. Photographs are included for the various stages of installing a ceiling system. Several data tables are also given. 8 pp., illus. Bundy Tubing Co., Radiant Heating Div., 10951 Hern St., Detroit 13, Mich.

### Elevators

*Buyers Guide — Passenger Elevators* (Booklet B-4572). Presents types and features of Westinghouse passenger elevators. A separate section of the booklet is devoted to each of the following items: component parts of elevators; controls; selection; price data; layouts; installation; modernization; and maintenance. There are a number of illustrations, diagrams, tables and case examples included. 52 pp., illus. Copies may be obtained if requested on company letterhead stationery. Attn. Mr. E. B. Dawson, Elevator Div., Westinghouse Electric Corp., 150 Pacific Ave., Jersey City, N. J.\*

### Plastic Paneling

*Consoweld Decorative Laminates — Room Planning Guide.* Booklet presents many uses of a thermo-setting plastic laminate for use on vertical and horizontal surfaces. The plastic, which comes in the 32 colors shown in the pamphlet, can be combined in various arrangements suggested for kitchen, dining room and bath. 12 pp., illus. Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis.\*

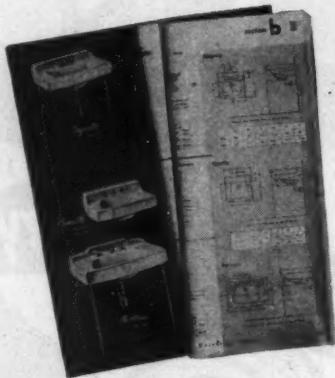
(Continued on page 186)

# New 1951 Book about bathroom fixtures

COMPLETE! COLORFUL! PRACTICAL! HELPFUL!



IT'S GOT EVERYTHING,  
this NEW  
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New architect-designed bathroom plans in full colors . . . Drawings and specifications of complete bathroom layouts, and of every individual Universal-Rundle fixture . . . Color schemes . . . Commercial, industrial, and institutional fixtures . . . Kitchen equipment, sinks, wall and base cabinets . . . The facts about fittings and trim . . . A catalog of complete help for the planning, specification, and installation of bathroom and kitchen fixtures . . . A "must" for your working library—send for your copy!

**DESIGNS FOR BETTER BATHROOMS**, are these full-color renderings of the finished bath, with detailed mechanical layout drawings and specifications. Planned by an architect, they help prospects visualize the fixtures in a harmonious, decorative setting, help them make up their minds.

**FIXTURE PHOTOGRAPHS TO HELP YOU PLAN** are here in profusion. Actual photographs of every fixture in the Universal-Rundle line, with full specification data and accompanying drawings—of bathtubs, lavatories, and water closets in the home, commercial, industrial and institutional fields.

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Gentlemen: Please rush me one copy of your new 1951 catalog. My letterhead is attached.

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## Universal-Rundle



UNIVERSAL-RUNDLE CORPORATION • NEW CASTLE, PA.

FEBRUARY 1951

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no substitute  
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■ Accredited sources indicate that only about 2% of our Manufacturing Corporations have been in business continuously for 65 years. Fitzgibbons is proud to be among those select few.

The experience gained by our sixty-five years in building quality steel boilers is your assurance of top design, top construction, top performance.

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# MODULAR COORDINATION: 6

Prepared with the cooperation of Structural Clay Products Institute

Freedom in design is not affected by use of the Modular Coordination System. Both designing and preparation of drawings on a modular basis follow closely the usual methods. The only added factor is the discipline of a 4-in. grid. The small size of the grid and the possibility of integrating non-modular sized items permit as infinite a variety of plan and elevation solutions as the more traditional practices.

Planning on a modular system can be divided into five steps:

1. Preliminary drawings;
2. Selection of over-all dimensions;
3. Identification of significant details;

4. Development of modular details;
5. Correlation of details on working drawings.

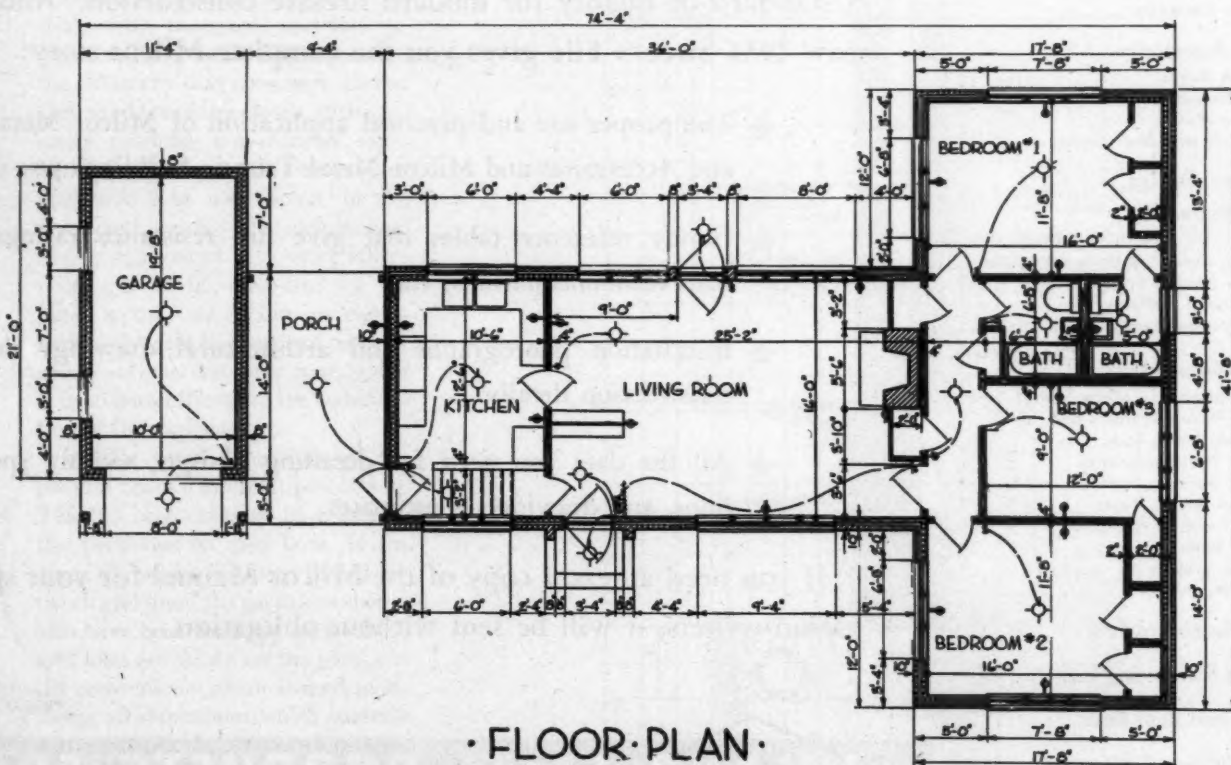
Preliminary plans are developed from usual rough sketches for presentation to the client and for cost estimates. The grid placement, discussed in the preceding sheets of this series, should be carefully studied at this stage. The 4-in. grid may be used for these plans, but more often a large layout module using some multiple of 4 in., say 4 ft-0 in., is employed. Grid lines are not usually shown on the small scale of these drawings.

Over-all dimensions for the entire structure, wall lengths, opening widths and heights, partition locations, etc.,

should be planned in multiples of 4 in. to assure agreement of plans with grid, and to eliminate unnecessary details.

Significant details should be chosen for development into working drawings; duplications should be avoided. Such details as similar sills, heads, jambs, etc., which fall on corresponding grid openings need only be shown once.

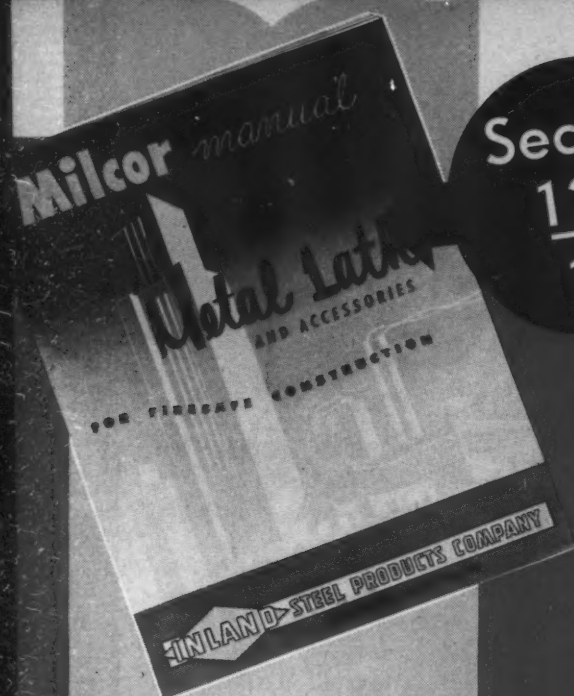
Modular details are then chosen from standards or catalogs, or individually developed if these do not satisfy the problem. A large series of recommended details have been developed by the study committees of the American Standards Association



• FLOOR PLAN •

A typical small masonry house designed on a modular basis. The inner structural tile wythe has been centered on a grid line; most partitions are similarly placed. Arrows show dimensions which coincide with grid lines. Dots show others which do not coincide





Section  
12a  
1n

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Applied Metal Trim  
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- ★ All the data you need for detailing designs, writing specifications, and drawing up estimates.

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Cleveland 14, Ohio • Detroit 2, Mich. • Kansas City 8, Mo. • Los Angeles 58, Calif.  
New York 22, N. Y. • Rochester 9, N. Y. • St. Louis 10, Mo.



Refer to the Milcor Manual for aid in planning firesafe construction — section 12a/1n, Sweet's Architectural File, 1951.

FEBR

# MODULAR COORDINATION: 7

Prepared with the cooperation of Structural Clay Products Institute

Project A62 to assist manufacturers in determining sizes for their modular products. These have been published in their *A62 Guide*, and in a number of manufacturers' catalogs.

Correlation of details with working drawings is accomplished by using some appropriate symbol to key the detail to plans and sections. These symbols may be developed by the individual office, or chosen from a standard series developed by the A62 Project.

## A Typical House Plan

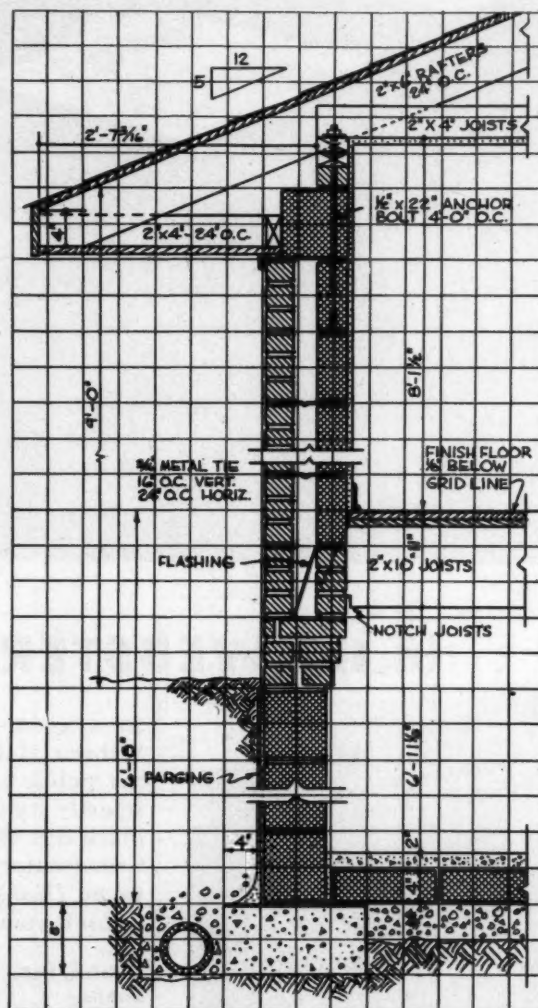
The plan and details illustrated on Sheets 6, 7 and 8 are of a masonry house designed by the Engineering Dept. of the Structural Clay Products Institute to show application of Modular Coordination to the layout of small house plans. The house is one story, with basement, and has exterior walls of brick and structural tile. Masonry unit sizes were chosen that would conform closely with generally available non-modular sizes: nominal  $2\frac{3}{8}$ -in. brick, with three courses in 8 in. was chosen for the outer cavity wall wythe; and nominal  $5\frac{1}{8}$ -in. structural tile, with three courses in 16 in., was used for the inner wythe (see section at right). Ordinarily, grid lines are not used for small sections, but they were added here to better illustrate the coordination of the various parts.

Interior room dimensions of the plan on Sheet 6 are multiples of 4 in. This has been obtained by centering the partitions on grid lines. If the inner tile wythe had been placed between grid lines, the partitions should also have been similarly located. No grid lines are shown on the plan, but the conventional arrow is used to indicate all dimensions which coincide with grid lines. At all other locations, small dots are used instead of arrows. All measurements indicated are nominal dimensions between two nominal faces if shown by dots or arrows.

The over-all nominal 10-in. wall

thickness presented the problem as to which of the two wythes should be centered on a grid line. It was found that by centering the inner tile wythe on the grid, both the tile and brick joints could be related to the grid. In such a placement, the 8-in. foundation wall falls between two grid lines.

These are the nominal dimensions. The actual masonry surfaces are set back the distance of one-half the standard mortar joint from the nominal surface. All other materials — steel, wood, glass, etc. — are similarly referenced to the nearest 4-in. grid line. This is shown on the larger



Typical wall section shows coordination of walls with roof, floors and foundation walls. Grid lines have been used as well as the dot and arrow symbols to better illustrate relationship of members



# CRANE

*the preferred plumbing*



## in the WEBSTER HALL Hotel, Pittsburgh



In a ground-to-roof remodeling program begun in 1946, the Webster Hall has modernized all of its guest bathrooms as well as the public lounges. This view of the women's rest room shows smartly styled, shell pink Crane Marcia Lavatories in a counter of black tile. Of vitreous china, the Marcia comes in white and eight Crane colors. Features: roomy, semi-oval basin, exclusive *Securo* waste. *Dial-ese* controls on convenient beveled panel. Size: 24" x 21". Consult your Crane Branch or Crane Wholesaler.

DESIGN, INC., St. Louis  
Architect

WAHRHAUS & HARTNER, Pittsburgh  
Plumbing Contractor

# CRANE

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836 S. MICHIGAN AVE., CHICAGO 5  
PLUMBING AND HEATING •  
VALVES • FITTINGS • PIPE

# MODULAR COORDINATION: 8

Prepared with the cooperation of Structural Clay Products Institute

scale details of the main floor and basement windows shown on Sheet 7. In complete plans, such details are also needed for typical wall, floor and door sections. The grid is usually shown on the larger scale details.

On the main floor, two different window sizes are used. However, the sill details for both heights are identical. With nominal  $5\frac{1}{3}$ -in. tile heights, this will occur when the difference in window heights is an even multiple of 8 in. In the brick wythe, identical sill conditions will occur when the window heights are even multiples of

4 in. Jamb and head details are identical for all windows. A 2-in. recess was used to accommodate double-hung wood windows. No symbols to key details to plan and section are shown on these illustrations.

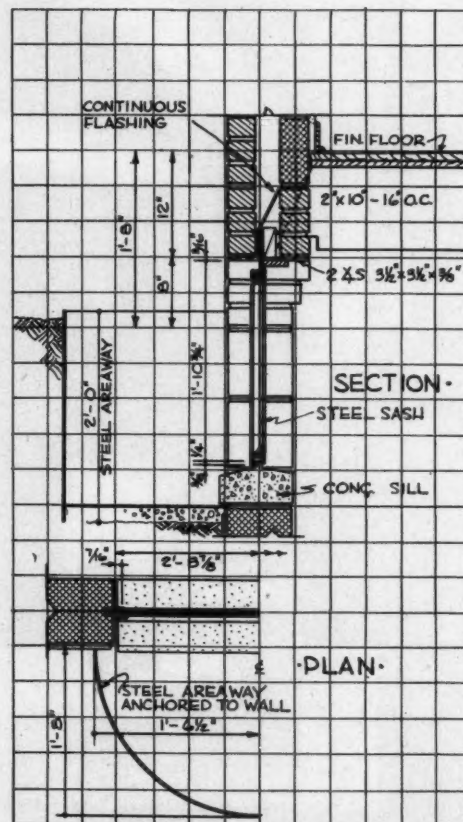
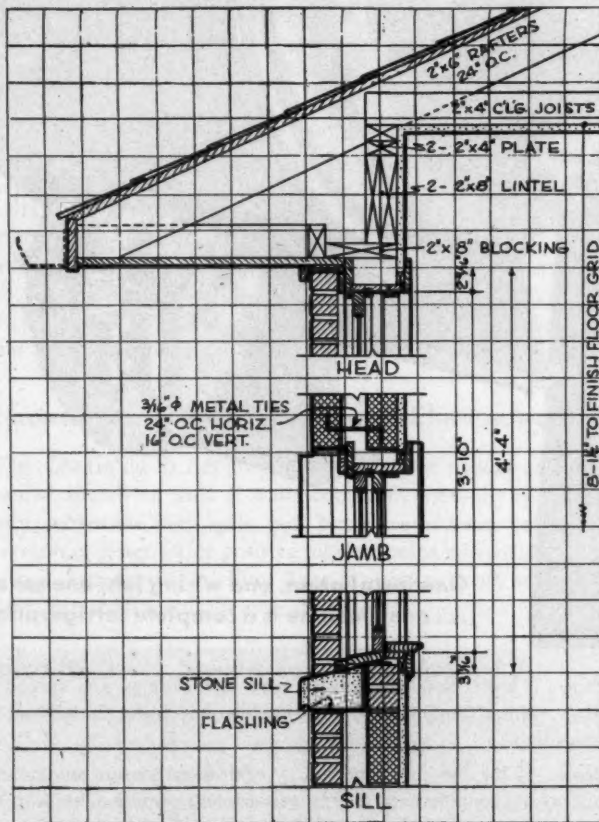
The nominal dimensions referred to for masonry units are equal to the unit dimensions plus the thickness of one mortar joint in all three dimensions. Standard joint thicknesses are:

Concrete Masonry	$\frac{3}{8}$ in.
Clay Back-up Units	$\frac{1}{2}$ in.
Clay Structural Units	$\frac{1}{2}$ in.
Clay Facing Units	$\frac{3}{8}$ , $\frac{1}{2}$ in.

Salt Glazed Facing Units	$\frac{1}{4}$ in.
Clear Glazed Facing Units	$\frac{1}{4}$ in.
Ceramic Glazed Facing Units	$\frac{1}{4}$ in.

The use of nominal dimensions which include the thickness of the mortar joint has been adopted to facilitate the combination of various types of masonry in a wall detail.

The central headquarters for information on the Modular Coordination Project is the office of The Secretary for Modular Coordination, American Institute of Architects, 1741 New York Ave., NW, Washington 6, D. C.

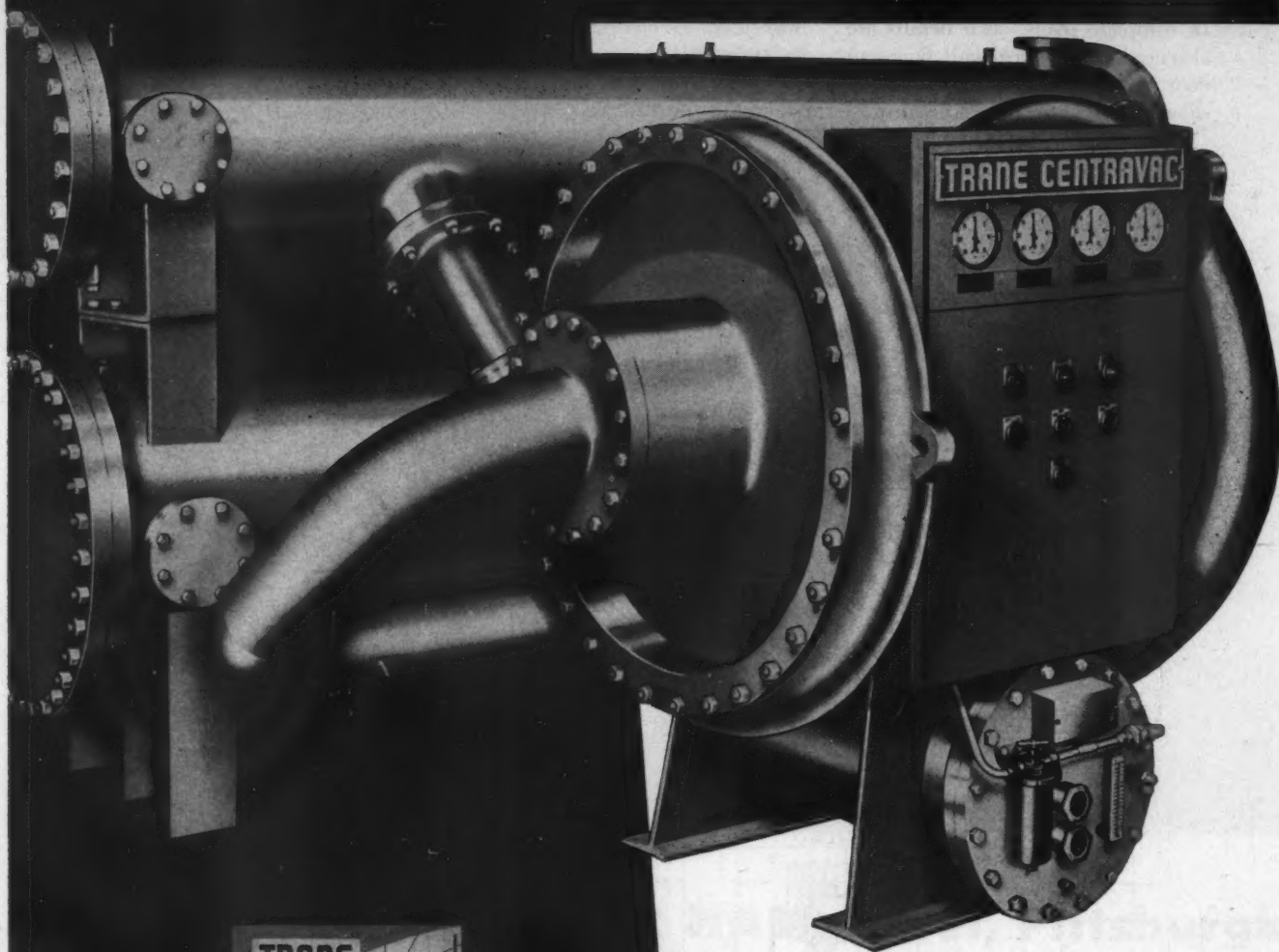


Details of main floor windows (left) and basement windows (right). Similarity of windows on each floor, and corresponding placement on grid, permit use of a single detail in each case



HERE'S THE NEW

# TRANE CenTraVac...



For complete literature and full information contact the Trane Field Representative in your area or write to The Trane Company, La Crosse, Wisconsin, for Bulletin S-399.

**One installation, one wiring job, one set of controls  
... one machine is a complete refrigeration system.**

Now... better-than-ever results from the systems you design or install... with a CenTraVac, the completely new Trane Centrifugal Refrigeration Unit.

Now... for the first time... a centrifugal design engineered for practical air conditioning and process cooling requirements with models ranging in capacity from 45 to 190 tons of refrigeration.

Flexible capacity control, proportionate power reduction, hermetically sealed construction—these exclusive features are only a few of the outstanding basic improvements available only in the great new Trane CenTraVac Centrifugal Refrigeration Units.

MANUFACTURING ENGINEERS OF HEATING

ARCHITECTURAL RECORD

# it's more than a compressor!

## Complete centrifugal refrigeration unit cuts costs four ways

For the first time, a centrifugal unit furnishes chilled water for installations as low as 45 tons! The CenTraVac is the only centrifugal designed for smaller jobs as well as the bigger ones. A new kind of centrifugal—with hermetically sealed direct drive—with stable operation from 100% down to 10% of rated capacity—with reduced power consumption under reduced capacity operation.

### Big Power Savings On Jobs As Low As 45 Tons!

When less cooling is demanded by the system, the CenTraVac automatically lowers capacity. Horsepower per ton reduction parallels capacity reduction over wide operating ranges. Owner pays only for cooling actually used by the system, thanks to CenTraVac built-in capacity control and the new Trane power reduction feature.

### Simplified Installation Slashes Costs!

Compact, lightweight CenTraVac can be located conveniently in building without special mounting foundations. Smooth running, quiet operation eliminates need for isolation. Then, too, *one* wiring job, *one* set of connections, *one* system of controls is all that is required. The CenTraVac is a hermetically sealed unit containing the compressor, the condenser and the evaporator for the complete chilled water system!

### Maintenance Time and Expense Eliminated!

The CenTraVac is designed to run without special attention. Impellers mounted directly on shaft of water-cooled, hermetically enclosed motor eliminate troublesome shaft seals, gear boxes, unnecessary bearings. Forced-feed oil system is designed for positive lubrication of two main bearings, the only bearings in the entire machine. Turn it on, turn it off, as often as necessary, or let it run continuously season after season.

### High Efficiency Means Low Cost Cooling!

Less than one horsepower per ton required for usual air conditioning applications! Under varying loads the tonnage-to-horsepower ratio often averages out even more favorably.

The CenTraVac supplies lowest cost chilled water for smaller jobs as well as big ones. Five models to choose from between 45 and 190 tons!

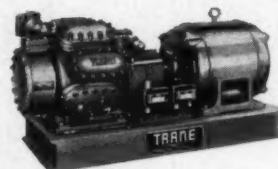
This great new Trane line makes centrifugal refrigeration available—for the first time—in the capacities required for the majority of practical air conditioning and process cooling applications!

AND AIR CONDITIONING EQUIPMENT • OFFICES IN 80 CITIES

FEBRUARY 1951



**New Trane Self-Contained Air Conditioner!**  
Brand new design packs greater capacity into small cubic space, produces more cooling, yet occupies less floor area. See new Trane Bulletin S-362.



**The Brand-New, All-New Trane Reciprocating Compressor.** Higher efficiency . . . smoother running . . . longer lasting . . . here's a new Trane-designed and Trane-built refrigerating unit for 10- to 50-ton jobs. See bulletin DS-361.



**Choose Trane and Choose Your Own Weather!**  
Each guest at Continental Hotel, Miami Beach, Florida, can choose his own weather because management wisely chose UniTrane Air Conditioning . . . complete systems like this, with individual room weather control, are easier than ever to design and install with Trane's bigger, better 1951 line of products.

# TRANE

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EASTERN MFG. DIVISION • SCRANTON, PA.  
TRANE COMPANY OF CANADA, LTD., TORONTO



# Look to M-C & S

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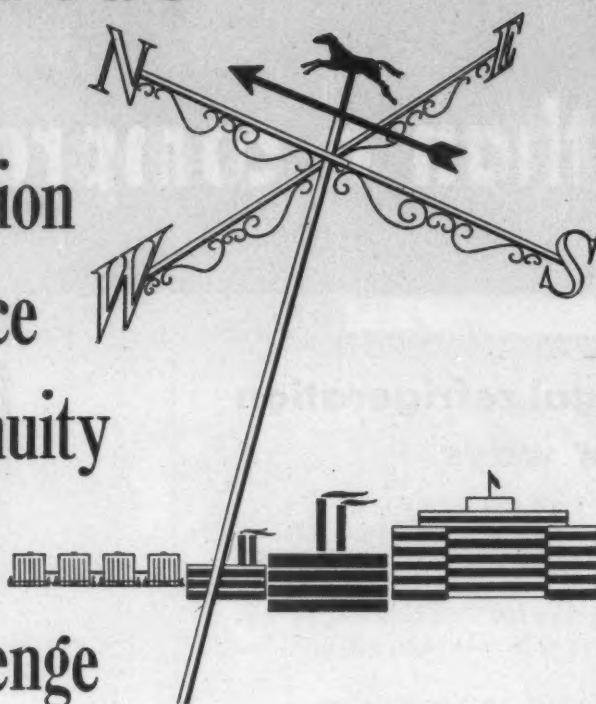
# construction

# experience

# and ingenuity

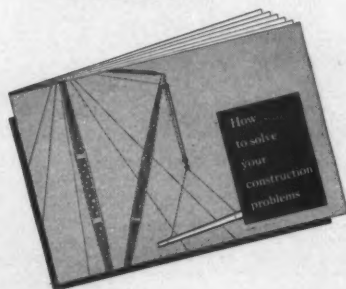
# to meet

# the challenge



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Under current conditions, construction know-how is needed more than ever to translate your architectural plans into structural reality. Working in close harmony with you, M-C & S brings its many specialized skills and unrivalled facilities to bear on each job. Merritt-Chapman & Scott project managers have the experience and proved ingenuity that assure fast, on-the-spot solutions as unexpected problems arise. Examples of M-C & S's ability to complete various types of projects as designed, on time, are contained in the brochure offered below.



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CLEVELAND • BOSTON • NEW LONDON

## DOWNLIGHTING

(Continued from page 145)

tracting variations in illumination, the cost in terms of discomfort and an unesthetic effect far exceeds the cost involved in the use of more units with more restricted beams.

Only general figures can be given as a guide for fixture efficiency (ratio of light output of fixture to light output of lamp). If a total 90-degree angle downward is considered the largest that can be used, yet keeping the bright rays out of the "normal angle of vision" except for very low ceilings, 50 per cent is considered a good figure. The use of the sealed beam type of reflector lamp can raise this figure to 60 per cent. Most flush lens plates, even of the concentrating type, appear so bright compared to their immediate background, unless their risers have been opaqued, that they seem to be more efficient than they really are. Seldom is there more than 40 per cent of the output within the useful angle (90 degrees downward).

Most optical equipment of the pin-spot type, when the beam is projected through a small opening, has an efficiency of less than 10 per cent. This is due to the limited use of the normal output of the lamp. Where framing shutters are used to get a sharp cutoff for specific area lighting, the output may be as low as two or three per cent. With a careful selection of objective lenses, an ellipsoidal reflector framing unit (see Fig. 4c) can have an efficiency as high as 40 per cent. Furthermore, relatively short life (200 hours) expensive, filament lamps are required for most optical units. Whenever possible, the flood lamp (500, some 800, hours) should be used.

### Technical Data and Layouts

Some manufacturers can supply performance data (foot-candles at various spacings and mounting heights) in lieu of distribution curves which are Greek to the average person (see table). When making a layout of downlights, specifications of lamps, a list of materials and construction details should be at hand in addition to the performance data. With this information, the designer can select the wattage, color (when desired), distribution, number and control of the downlight units available.

He must visualize the ultimate effect himself or test by a sizable mockup. Four or more units in a test set-up are adequate. It is better yet to examine a finished layout similar to the problem at hand.



Patterns: 302 (LZA) meadow green, 001 (EZ) gray white.

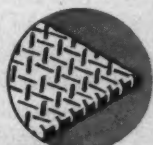
Designed with practical, easy to clean

## FREMONT RUBBER TILE!

Over goes the "stage-coach" and the battle begins. The designer of this FREMONT Rubber Tile Floor hadn't expected an Indian uprising but he did plan a floor that could take it. Fremont Rubber Tile in fade-resistant colors withstands abuse, remains sparkling new for years with a minimum of care. Plan your next job the practical way—with FREMONT Rubber Tile.

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Sponge Rubber  
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# HIDE the hardware... says

## FRANK LLOYD WRIGHT

*"My efforts since I've been practicing for myself, is to get rid of it. The less hardware that is in evidence, the better. The more you get the hardware out of sight, and make less of it, the more you are going to be modern and in line with modern architecture."*



IDEAL FOR FLUSH DOORS

*"The less hardware that is in evidence the better."*  
The Soss Invisible Hinge is also known as "the hinge that hides itself."

*"Hardware is still too ornamental—it isn't sufficiently simple."*

What could be less ornamental or more simple than something you can't see—like the Soss Invisible Hinge?



PERFECT FOR WALL PANELS

*"Hardware should be something that really works and should be out of sight—"*

Soss Hinges "really work" smoothly and quietly on hardened steel roller bearings.

★ All quotes taken from Mr. Wright's address before the Pacific Coast members of the American Society of Architectural Hardware Consultants and the National Contract Hardware Association at the Arizona Biltmore in Phoenix, Arizona.

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Write for FREE CATALOG that gives complete details, blueprint templates, and the many uses of this modern hinge to...

**SOSS MANUFACTURING COMPANY**  
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A.I.A. File No. 27-B-1

## Architectural Engineering

### PRODUCTS

(Continued from page 149)

#### Plastic Pipe

Carlson "EF" Plastic Pipe is being utilized for jet well installations in the new 600-home La Grange Highland Housing Project near Chicago, Ill. Each house has a well about 150 ft deep, located adjacent to the garage foundation. It is claimed that savings in time, labor and equipment made possible through use of the flexible polyethylene pipe helped to maintain low unit cost of the homes. (See Products for Better Building, ARCHITECTURAL RECORD, December 1950, page 155.)

In the installations, the plastic pipe was coupled to the jet units with threaded adapters, then fed manually into the well. Installation was said to have been rapid, and to have required no special materials handling equipment or tools.



Plastic pipe is used to save cost in well installations for housing project

The lightweight pipe is said to be guaranteed against rot, rust and electrolytic corrosion, and to be practically unbreakable at temperatures ranging from -70F to 140F. It is resistant to the growth of mold and bacteria and features negligible water absorption. Carlson Products Corp., 10403 Meech Ave., Cleveland 5, Ohio.

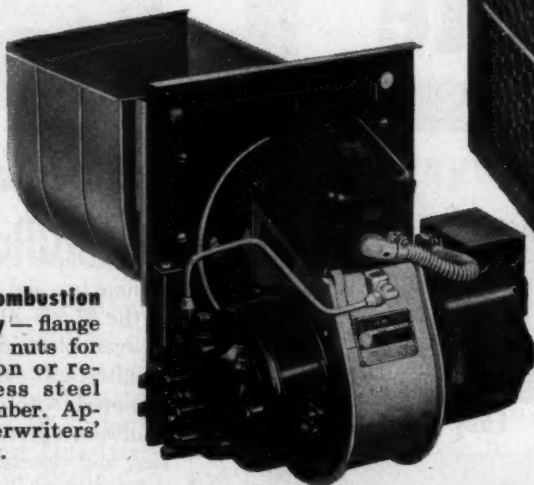
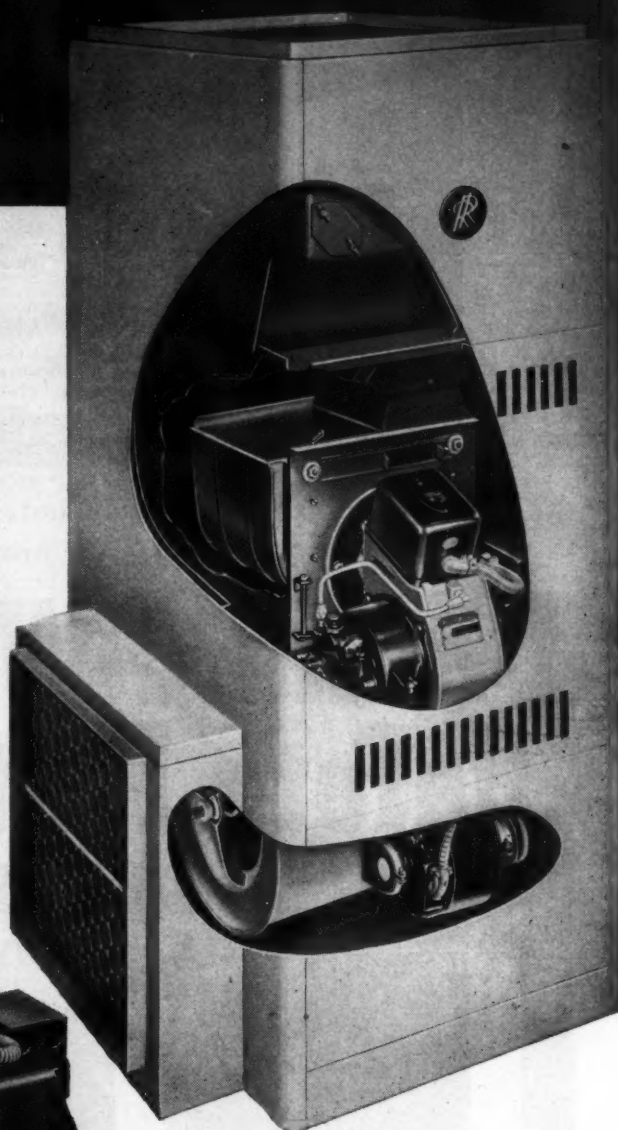
(Continued on page 164)

Here's a new and wanted addition to Richmond's line of winter air conditioners...giving you a still wider selection of quality heating units.

Here's a unit built to fit easily into homes where space is tight...ideal for restricted space use in utility closet installations.

Here's a competitively priced, thrifty-to-run unit that more than meets today's demand for low-cost heating...without sacrificing quality.

Here's the new SU-P in its handsome jacket...made of sturdy steel, finished in light green Hammertone baked enamel. Note the heat exchanger...made of 12 gauge steel...welded for durability and efficiency. Use the handy coupon to get full information—fast. Remember—when quality and economy count, count on Richmond.



**Oil Burner and Combustion Chamber Assembly**—flange mounted with 4 nuts for easy installation or removal. Stainless steel combustion chamber. Approved by Underwriters' Laboratories, Inc.

**Type SU-P**  
Steel Oil-Fired Winter Air Conditioner. Two sizes—85,000 BTU and 106,000 BTU output at Bonnet.



# RICHMOND

RICHMOND RADIATOR CO.—AFFILIATE OF REYNOLDS METALS CO.



Richmond Radiator Company AR/2  
19 East 47th Street, New York 17, N. Y.  
Please send me information and literature on Richmond heating equipment and plumbing fixtures.

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ADDRESS .....





For greater safety under foot,  
in your plant and on your products

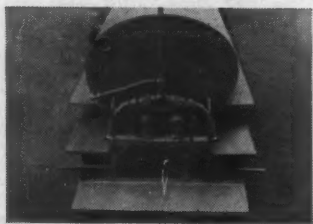
# Inland 4-Way Safety Plate®



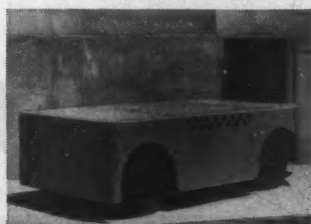
Safe Footing



Easy Cleaning



Firesafe



Adds Strength



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and application data.  
Send for it!

STOCKED BY LEADING STEEL WAREHOUSES

## Architectural Engineering

### PRODUCTS

(Continued from page 162)

#### Prefabricated Houses

Gunnison Homes, Inc., the prefabricated housing subsidiary of United States Steel, has added a new low cost model to its product line. The house, called the *Coronado* is described as having "contemporary ranch-type styling, featuring low-pitched roofs with wide, overhanging eaves . . . horizontal lines and large picture windows."



New model prefabricated house features low cost, variety of exterior treatments

The houses are made in five sizes containing two and three bedrooms, and sell in the \$7,000-\$10,000 price range. Each is available with a variety of exterior architectural treatments. They are equipped with steel kitchen cabinets, double-compartment sink, bath facilities, and closets. All are completely insulated and have automatic hot water and forced hot air furnaces for gas or oil fuel. United States Steel Corp. Subsidiaries, 208 S. La Salle St., Chicago 90, Ill.

#### Hardboard Panels

*Grani-lite Tileboard Panels* feature a new finish which is said to have "the multi-colored appearance of real granite." The finish is in hard baked enamel and is available in five colors: sky blue, sea green, apricot blush, dove gray and maltese gray. The pre-decorated panel boards are made in several patterns,

(Continued on page 166)

# Flexible lighting system that can be easily changed without rewiring



## Move or add lights *anytime, anywhere* with BullDog Universal Trol-E-Duct

Meet changing conditions quickly, economically with this truly flexible lighting system.

To move or add lights, simply pick the right spot and insert handy twist-out plug or trolley. Every inch of this money-saving 50-ampere duct system is a tap-off! Prefabricated and standardized in lengths from one to ten feet, it can be dismantled and moved to a new location without scrapping a single part.

Call in your nearby BullDog Field Engineer for more information about this modern lighting system. He will be glad to show you an installation near your own office. Or write BullDog direct for descriptive literature.

### **BULLDOG ELECTRIC PRODUCTS COMPANY**

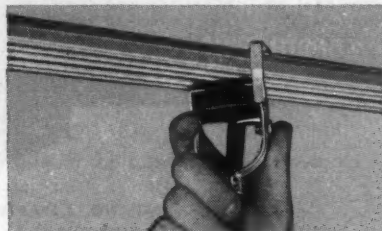
DETROIT 32, MICHIGAN • FIELD OFFICES IN ALL PRINCIPAL CITIES

IN CANADA: BULLDOG ELECTRIC PRODUCTS OF CANADA, LTD., TORONTO

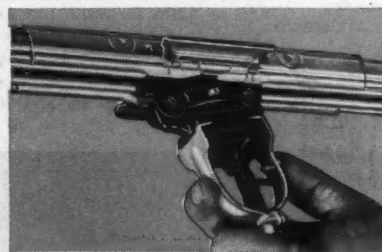


# BULLDOG

**PIONEERS IN FLEXIBLE ELECTRICAL DISTRIBUTION SYSTEMS**



To tap off current at any point along slot, insert twist-out plug and give it 90° turn. Plugs are grounded on steel casing before contacts touch bus bars; narrow access slot protects operator.



Trolley type outlets are used where mobility is essential—for drop-cord lighting in stock bins and inspection areas or small portable tools.



## PRODUCTS

(Continued from page 164)

principally achieved by wide-shouldered score lines. These include tile patterns, parallel-line, "streamline" and smooth-surface. Panel sizes are 4- by 4-ft, 4- by 6-ft and 4- by 8-ft. Wallace Manufacturing Co., 10th and Fayette St., N. Kansas City, Mo.



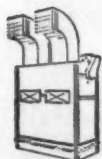
School ventilating and heating system is designed to prevent drafts at windows



SAVE  
UP TO  
**\$5,000**  
ON AIR  
CONDITIONING!

PAT. NO. 2,297,928

**GOVERNAIR**  
COMPLETELY PACKAGED  
AIR CONDITIONER



UNIT COOLERS



EVAPORATIVE CONDENSERS



AIR CONDITIONERS

Save water! Save space! Save installation time and money! Save operating costs! Yes, install Governair and save from \$50 to \$200 for each ton of the completely packaged Governair unit designed to fit your needs! Experience proves Governair can save you up to \$5,000 on

a 50-ton Governair unit that gives greater dependability and more "engineered efficiency" than ever before!

If you want the best—if you want the most economical and reliable air-conditioning unit on the market... CHOOSE GOVERNAIR and SAVE!



**GOVERNAIR**



BLAST COILS  
FOR HEATING  
& COOLING

### Schoolroom Ventilation

Draft/Stop ventilation is a new development in schoolroom heating and ventilating that is said to intercept chilling down drafts caused by large window areas. The system incorporates a long "cold air" slot, behind utility cabinets, placed at the base of the windows. Air is drawn through these into a horizontal duct which forms the base of the cabinets. The air is then drawn into a central unit ventilator for re-heating and discharge towards the ceiling, or expelled through an exhaust vent in the wall behind the cabinets. Cabinet and ventilator units come in a uniform height and depth of 32 and 14½ in., and in varying lengths. They are made of all-welded metal construction, and have linoleum tops. Matching auxiliary convectors-heaters are also available. Herman Nelson Div., American Air Filter Co., Inc., Moline, Ill.

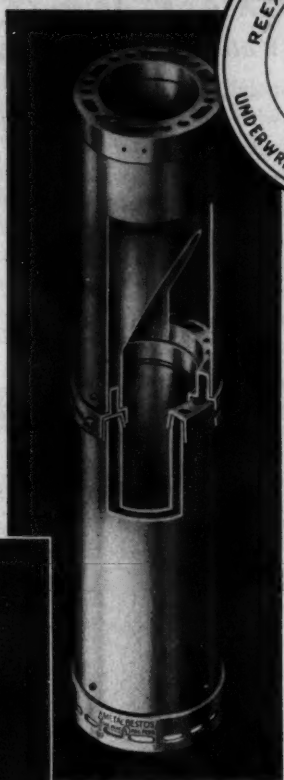
### Gas Furnace

The International Furnaces, Models M7G and R9G, have been designed for perimeter heating of basementless homes. The packaged units are fitted in baked-enamel finished cabinets, with all parts accessible from the front for oiling and servicing. All types of gas may be used for fuel.

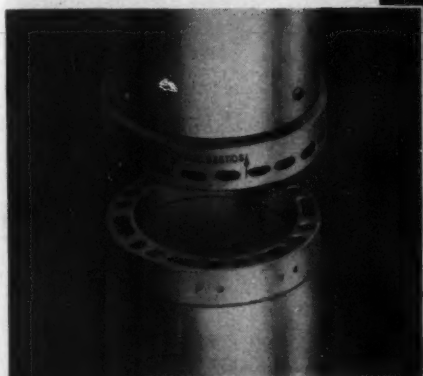
Model M7G has an input of 75,000 Btu per hour, and an output of 60,000 Btu in all altitudes. The cabinet measures 22¼-in. wide by 20¼-in. deep, and is 70-in. high. Shipping weight is about 275 lbs.

Model R9G has an input of 150,000 Btu per hour and an output of 120,000 Btu per hour. For high altitudes and LP gases, the input is 140,000 Btu, the output 112,000 Btu. The cabinet meas-

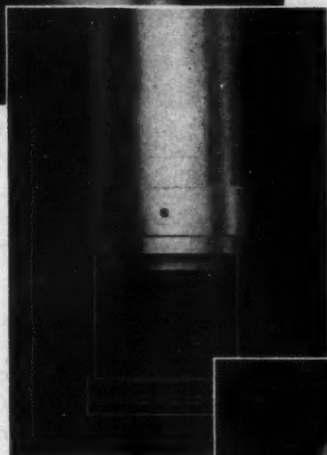
(Continued on page 168)



DOUBLE-WALL  
CONSTRUCTION

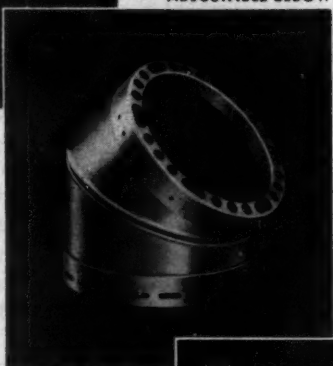


QUICK  
COUPLING



ADJUSTABLE ELBOW

ADJUSTABLE LENGTH



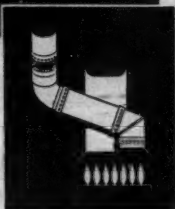
## FOR COMPLETE SAFETY *specify* **QC METALBESTOS GAS VENT PIPE**

- Listed by Underwriters' Laboratories without qualification as a Type B Gas Vent.
- Double-wall, all-aluminum construction assures maximum venting efficiency.
- Die-formed, gastight couplers permit easy, fast foolproof installation.
- Adjustable lengths and elbows eliminate cutting, reduce installation costs.

Designed solely for venting gas appliances, QC Metalbestos provides complete protection against gas fumes and fire hazards while assuring a quick, strong draft for proper venting. It fulfills all requirements of the National Board of Fire Underwriters and Underwriters' Laboratories, Inc.

Available through contractors and dealers throughout the nation.

Write for METALBESTOS Catalog No. 6  
To Department 'L'



# METALBESTOS

DIVISION

WILLIAM WALLACE COMPANY • BELMONT, CALIF.



## PRODUCTS

(Continued from page 166)

ures 22 $\frac{1}{4}$ -in. wide by 27 $\frac{3}{4}$  in. deep, and is 66-in. high. Shipping weight is about 475 lbs.

Warm air is circulated from the bottoms of the furnaces into ducts underneath wood floors or cast in concrete slab floors. Blowers are spring suspended for quietness and vibration-free operation. Only 1-in. clearance is required at

sides and back of cabinets. Furnace Div., International Oil Burner Co., 3800 Park Ave., St. Louis 10, Mo.

### Insulated Metal Walls

A reputedly economical field-constructed metal wall with unusual thermal properties is said to be *Mahon Insulated Metal Walls*. These walls, constructed in two types (ribbed or fluted) from two or three standard wall plates, are claimed to have an over-all heat transmission coefficient "U" of 0.15, or the equivalent of the "U" factor of a

28 in. solid masonry wall. The wall plates, rolled from 18 or 20 galvanized or stainless steel or aluminum, can be rolled in any length up to 50 ft, thus making expanses of continuous exterior wall surfaces without horizontal joints. Inside wall plates, placed vertically with the flat side in, are clip-welded to the structural members forming the sill, immediate girts and eave strut. Each plate then interlocks with its preceding plate. After fibreglas insulation has been placed between the ribs of the inside wall plate, a bar acting as a spacer between inside

## ARCHITECTS SURE MAKE A HIT—

WHEN THEY SPECIFY

# AMWELD

STEEL DOORS

AND FRAMES

AND SLIDING

CLOSET DOOR UNITS



All over the country, architects are receiving the praises of homemakers on the attractiveness of AMWELD Steel Doors & Frames and Sliding Closet Door Units. Architects also know that they cut building costs, blend with all types of architecture, require less installation time, and are competitive in price with other types of both wood and steel products. Send for new 12-page catalog.

### K-D UNITS, TOO!

Sliding Closet Door Units are also available in packaged, knocked-down form, complete with header, jambs, track and hardware. Suitable for new construction and particularly adaptable for remodeling.



Send for new 1951  
Building Products Catalog

BUILDING PRODUCTS DIVISION  
**THE AMERICAN WELDING & MANUFACTURING CO.**  
340 DIETZ ROAD • • • WARREN, OHIO



GEORGIA



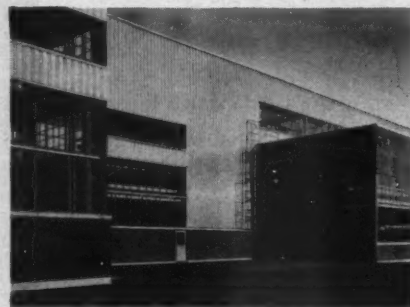
FLORIDA



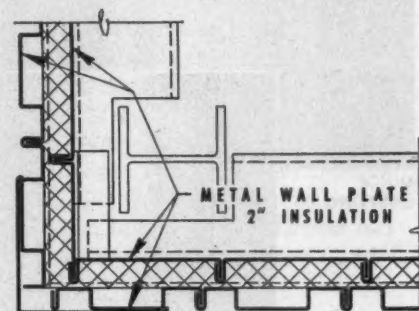
NORTH CAROLINA



MICHIGAN



Above: metal wall plates used for plant construction. Below: detail of wall



and outside walls is attached. Outside plates are placed with ribs or flutes facing out. As with the inside plates, these interlock with preceding plates, and are clip-welded to the spacer bars. Interlocking ribs of outside wall plates are secured by a clinch lock, providing lateral continuity in the exterior wall surface. Insulated metal walls have been used in such commercial buildings as automobile plants, warehouses, power houses, etc. The R. C. Mahon Co., Detroit 34, Mich.

### Surfacing Material

Korok, a new surfacing material, consists of chemicals and minerals fused to a steel core. The sheets are backed with temperboard, and rimmed tightly

(Continued on page 170)

## RESULTS GUARANTEED BY GOLD BOND!



### UNIVERSITY OF TULSA TULSA, OKLAHOMA

J. E. MABEE HALL (shown) and LOTTIE JANE  
MABEE HALL

Architect . . . .

Atkinson and Murray, Tulsa

General Contractor . . . .

Al Ward Construction Co., Tulsa

Plastering Contractor . . . .

True Plastering Co., Tulsa

You'll build or  
remodel better with

**Gold Bond**

WHO wouldn't like to go to college, with a dormitory as handsome as this to live in? The Mabee Men's and Women's Halls have a lifetime of efficient service built into them, too. Gold Bond metal lath and plaster products, including famous Best Bros. Keene's Cement, were used throughout.

Whether a job is big or small, there's definitely a big advantage when Gold Bond products are used *exclusively*. It means that the sole responsibility for material performance rests on *one reputable manufacturer*, National Gypsum Company. The over 150 better Gold Bond building products are fully described in Sweet's, and they're available at your local Gold Bond Lumber and Building Materials Dealer.

**NATIONAL GYPSUM COMPANY • BUFFALO 2, NEW YORK**

*Fireproof Wallboards, Decorative Insulation Boards, Lath, Plaster, Lime, Sheathing, Wall Paint, Rock Wool Insulation, Metal Lath and Sound Control Products.*



## PRODUCTS

(Continued from page 168)

with rubber and stainless steel to prevent water seepage into the edges. The surface is claimed to be virtually indestructible — to be resistant to flame, acids, alkalis, moisture, and abrasion by knives or steel wool. It is also said to be stain-, warp- and fadeproof. Any color or pattern desired may be added by screen print and also fused in.

The material is suggested for such uses as tops for cabinets, bars and tables, partitions, interior wall surfacing, store fronts and building facings. Korok is said to be so tough that it cannot be cut once it is made, hence all items are fabricated on special order. Korok Div., Enamel Products Co., 300 Eddy Rd., Cleveland 8, Ohio.

### Portable Furnace

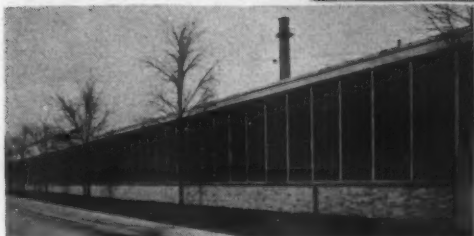
The Quiet Automatic Oil Burner Corp. has developed a new hot air furnace that is said to be fully portable.

The unit is mounted on wheels so that it may be shifted around, or used permanently in one place as desired. The furnace was especially planned for heating such large spaces as warehouses, barns, new construction; for drying concrete, plaster, etc.; or for the pre-heating of trucks and tractors.

To install the unit, the electrical cord is plugged into a 110 volt line, the hose attached to the drum the oil is delivered in, and the thermostat hung in an appropriate place. A regular attendant is not required during operation.

Make Daylight Hours More Profitable with . . .

## GLARE REDUCING COOLITE GLASS



Glare Reducing Coolite Glass installed in plant of American Box Board Company  
Vern E. Alden, Architect  
Clearing Industrial District, General Contractor

Blinding sun rays that cause eye fatigue and lead to inefficiency and production declines are turned aside or absorbed by Glare Reducing COOLITE Glass.

Of a cool, blue color with slightly greenish cast, COOLITE admits only softly diffused, comfortable daylight . . . reduces transmission of solar heat radiation and lightens load on air conditioning equipment. Temperatures inside are reduced . . . working conditions improved. Eliminated are painted windows, makeshift shields and bothersome blinds.

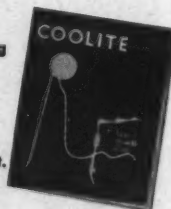
Used either in new construction or in modernization and sash replacement projects, the installation of Glare Reducing COOLITE Glass is an investment in greater production and decreased maintenance costs.

Installation of Coolite, Heat Absorbing and Glare Reducing Glass are stepping up output . . . reducing labor turnover in industries everywhere. For money-saving details, consult your nearby distributor of Mississippi Glass. See him today.

Rolled, Figured and Wired Glass by Mississippi is "Visioneered" for better daylight illumination. In a variety of patterns and surface finishes, all scientifically designed to distribute light to best advantage.

Send for new catalog, "Coolite Heat Absorbing and Glare Reducing Glass"

For further data see Sweet's Architectural File. Samples on request.

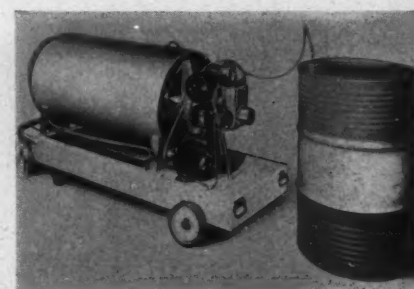


**MISSISSIPPI** *Glass* COMPANY

SAINT LOUIS 7, MO.

NEW YORK • CHICAGO • FULLERTON, CAL.

WORLD'S LARGEST MANUFACTURER OF ROLLED, FIGURED AND WIRED GLASS



Furnace for construction and plant use is completely portable, easily set up

The furnace has an adjustable turbulator which is said to give perfect high combustion so no smoke stack is required and no odor is produced. Units are available in several sizes. All burn regular No. 2 grade fuel oil and have stainless steel combustion chambers. Units with built-in oil tanks are also available. Quiet Automatic Oil Burner Corp., 33 Bloomfield Ave., Newark 4, N. J.

### Photographic Glass Panels

A new glass product, called *Tabular*, employs photosensitive glass, manufactured by Corning, for decorative panels designed to be set into natural stone backgrounds. When the glass is set into a piece of marble, granite or other stone, the effect produced is said to be that of a bas relief or carving. Wm. Henry Deacy, A.I.A., has served as architectural consultant for the development of the product.

A photograph of any three dimensional figure or sculpture can be faithfully reproduced in the panels, in tones of sepia, gray blue or opal (white). The max panel size currently available is about 4- by 5-ft. The product has been used principally in memorial work, but the manufacturer claims great possibilities.

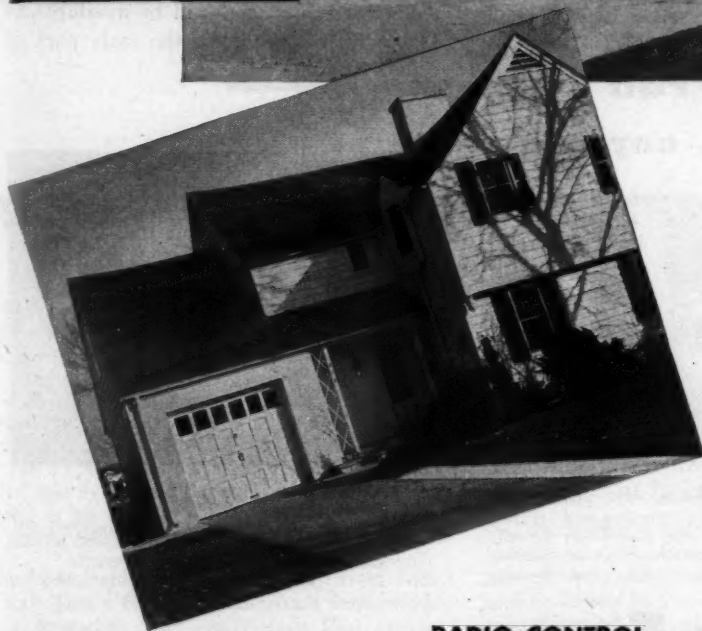
(Continued on page 172)

# Barcol OVERdoors

**WEATHERTIGHT CLOSING**

**EASY OPERATION**

**LONG LIFE**



THE selection of a garage door should be based on favorable answers to a number of key questions: Does it close tightly, yet operate easily without sticking? Will it continue to work properly for long periods without attention? Is reliable service available when needed? Has the manufacturer earned a reputation for making, and standing back of, a *good* product? . . . On the last question, we must let others speak for us, but on the first three we are sure you can be satisfied. Since 1928 we have applied our best engineering, manufacturing, and organizational skills to see that the Barcol OVERdoor was second to none in quality and performance. Thousands of successful installations indicate widespread acceptance of the Barcol OVERdoor. On your next job involving garage doors, *we invite your investigation.*

#### **RADIO CONTROL**

Reliability, based on over twenty years of specialized experience, is the distinguishing feature of the amazing Barcol Radio Control. With this equipment, the home owner has the added convenience and protection of opening and closing the garage door by simply pushing a button in his car.



See our Exhibit at the N.A.H.B. Exposition; Chicago, January 21-25, 1951

**BARBER-COLMAN COMPANY, 102 MILL ST., ROCKFORD, ILLINOIS**





## New Hunter Package Fan is easily installed in any attic, any home

■ Thousands of owners call the Hunter Attic Fan a feature of their home that they "couldn't do without." Low in initial cost, and with no upkeep expense, it provides an efficient cooling system for homes in all price ranges.

Installation of Hunter's new, compact Package Attic Fan is so simple and inexpensive. Fan, motor, suction box and shutter are all in one unit that requires only a ceiling opening in hallway and 18" clearance in attic. Four models, ranging from 4750 CFM to 9500 CFM (ratings certified) fit any home size and climate. Quiet, powerful, dependable—guaranteed by Hunter, exclusive fan makers since 1886. Mail the coupon below for new booklet on home ventilation.



**Low-Cost Installation**—This photo shows how easy it is to install the automatic shutter models. Fan unit is simply placed over the ceiling opening . . . no fastenings needed. Shutter unit fastens to frame around ceiling opening.

## Hunter PACKAGE Attic Fans

Hunter Fan and Ventilating Company  
396 South Front St., Memphis, Tenn.

Send copy of "How to Cool for Comfort" to:

Name.....

Address.....

City & State.....

MAIL FOR  
COMPLETE  
DATA

## Architectural Engineering

### PRODUCTS

(Continued from page 170)

ties in almost any decorative scheme. The permanence and non-fading quality of the glass is said to be guaranteed. The Charles Howe Corp., Newburyport, Mass.

### Three-Dimensional Textured Plastic

*Sealtuft* and *Coryl* are two new innovations in plastic sheeting and film. The materials are textures new to Vinylite—the former being stitchless quilted plastic and the latter a plastic film with color, printing and texture on both sides.

*Sealtuft*, according to the producer, is available in a new lightweight gauge especially suitable for use in home decoration. It comes in five patterns, each in sixteen colors, and will be available to manufacturers during the early part of 1951.



New process gives three-dimensional surface textures on plastic materials

*Coryl*, says the processor, is a new development in plastics, and features deep embossing in formed film which eliminates curled edges, heretofore a drawback in plastic draperies. It will be available in several patterns in the spring.

Both fabrics, it is claimed, are not only economical, but are durable, resist fading, tearing, abrasion, scuffing, oils,

(Continued on page 174)

It's e

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Day-in, day  
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SUNT

## WALLS AT WORK!

Suntile walls at work in the Hamm Brewery, St. Paul, Minn. Architect: C. H. Johnston. Contractor: Wm. Baumeister Const. Co. Authorized Suntile Dealer: Drake Marble Co., all of St. Paul.

## It's easy-to-clean, hard-wearing, real clay *Suntile*

You won't actually see the sign—but where you see Suntile in an industrial interior, you'll know the walls (and floors) are hard at work.

Day-in, day-out, these tough, trouble-resistant surfaces keep busy cutting down plant overhead. Routine maintenance costs next to nothing—and long run expenses, refinishing, redecorating and repairs, cost even less! An occasional plain water washing is all the attention Suntile ever needs. This means real savings for your client.

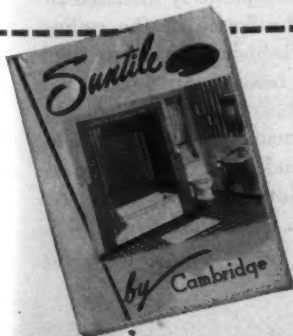
Product processing gets valuable help from Suntile, too. That's because of Suntile's *impervious* surface. It washes clean, *really* clean. Dirt, grease, moisture, many acids or bacteria cannot penetrate

Suntile's hard, fired-in finish. They stay on the surface where they can be thoroughly washed away.

And what a beautiful job Suntile does brightening up a working place! The colors *stay* lustrous and unfaded. Suntile's Color-Balance gives you practically unlimited color combinations to choose from, makes it easy to provide a cheerful, morale-building setting for any kind of production.

Put this versatile, real clay tile to work in the next interior you plan. Your Authorized Suntile Dealer can give you valuable help in this. He knows tile and he knows how to give you the finest installation. Every job carries his guarantee. See your classified telephone directory for his name, or write us.

**Ideal for: schools  
hospitals • stores  
public buildings  
industrial plants  
residences**



### NEW COLOR FOLDER AVAILABLE

Created under the direction of Faber Birren, leading color authority. 22 attractive wall colors, 27 beautiful shades of unglazed ceramic mosaic tile, 10 unique Suntile Camargo colors. All selected to give you a wide range of effective color treatments for walls and floors. Write today for your FREE copy, or see our Sweet's Catalog. Dept. AR-2, The Cambridge Tile Mfg. Co., Cincinnati 15, Ohio.

#### WAREHOUSES

The Cambridge Tile Mfg. Co.  
470 Alabama Street  
San Francisco 10, California

The Cambridge Tile Mfg. Co.  
941 N. Citrus Avenue  
Los Angeles 38, California

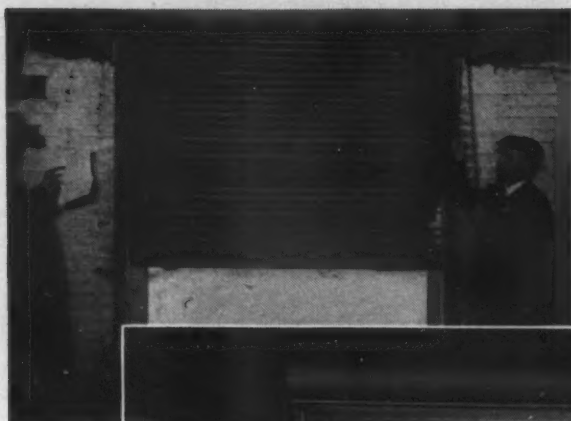


SUNTILE OFFERS YOU BOTH • BETTER TILE • BETTER INSTALLATION



# 47 YEARS OF SERVICE

and a few repairs make it ready for 47 more



The door at left has been in continuous service since 1903—for 47 years! The picture was taken this year, just before curtain slats were replaced and a few minor repairs made. In the photo below, the door is ready for many more years of efficient service and protection.



## Another User Proves the Extra Value of KINNEAR Steel Rolling Doors

You can find many similar records of long service for these famous doors in the Kinnear files—more proof that their interlocking steel-slat construction, *originated by Kinnear*, combines rugged durability and protection with smooth action and space-saving efficiency.

Kinnear Rolling Doors open straight upward and coil completely out of the way above the lintel. All surrounding floor, wall and ceiling space is fully usable at all times, because the doors need no extra room for opening and closing action.

Saving Ways in Doorways  
**KINNEAR**  
ROLLING DOORS

When closed, these all-steel doors give an extra measure of protection against fire, theft, intrusion, wind and weather, or accidental damage.

Kinnear Rolling Doors, built to fit openings of any size, are easily installed in old or new buildings. Equipped for operation by hand-lift, chain, crank or electric motor. With Kinnear Motor Operators, they offer the added convenience of push-button control, plus remote controls at any number of points, if desired. Write today for complete information.

The KINNEAR MFG. COMPANY  
FACTORIES  
1860-80 Fields Ave. • Columbus 16, Ohio  
1742 Yosemite Ave. • San Francisco 24, Calif.  
Offices and Agents in Principal Cities

## Architectural Engineering

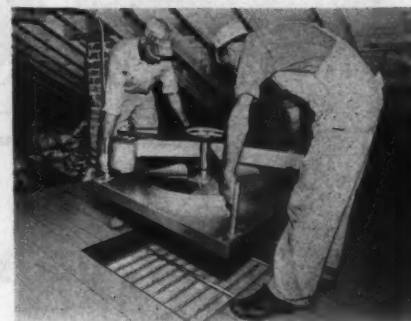
### PRODUCTS

(Continued from page 172)

grease and are non-inflammable. Bakelite Division, Union Carbide and Carbon Corp., 122 East 42nd St., New York 17, N. Y.

### Packaged Attic Fan

The *Robbins & Meyers Package Fan* is a vertical discharge attic unit, designed for use over narrow hallways and in low attics. The unit has a built-in suction box and an automatic ceiling shutter operated by a wall switch. It measures 3 ft square and projects 17½ in. above the attic floor.



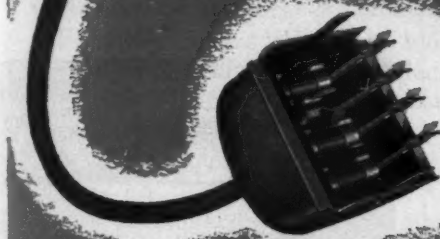
Packaged attic fan is easily installed in low attics, has automatic shutters

Provided with a ceiling opening and adequate exhaust areas, installation is very simple. Fan, motor and suction box are all in one unit that rests on the attic floor; no screws or bolts are required to hold it in place. Heavy rubber bases provide an air seal and cushion between the fan frame and the floor. The automatic shutter is separately installed by attaching to the frame of the ceiling opening. It is furnished with trim, and in a light ivory baked enamel finish.

The fans are available in 4750 and 6800 CFM capacities. Units are said to be very quiet, and to require little or no maintenance. Robbins & Meyers, Inc., 387 S. Front St., Memphis, Tenn.

(Continued on page 176)

**For Greater  
Production  
Efficiency...**



## **POWER PLUGIN**

**The Midget Size Busduct, Now Available  
For Three Phase, Four Wire Service**

Ⓐ Power Plugin, the midget size Busduct is the answer to today's demand for greater plant production efficiency. Available now for 4 wire 3 phase service, 3 wire 3 phase service and 2 wire, single phase.

Ⓐ Power Plugin provides convenient plugin outlets all along the line, permitting machines to be moved in and out of production lines without slowing down or delaying operations.

Ⓐ Power Plugin provides 50 amp., main feeder capacity for ½ to 3 H.P. 240 volt motors, AC or DC, with conventional type fuses, and 7½ H.P. maximum with dual element fuses. In its new design

Ⓐ Power Plugin also provides 208 volts single phase or three phase

for power to motors, and 120 volts for light where individual illumination on machines is desirable. It also provides 120 volts for small pump motors on return lubrication systems.

Underwriters' Laboratories approved, Ⓐ Power Plugin is only 3½ inches wide and 2 inches deep in size. It is available in 5- and 10-foot sections with plug-in outlets every 20 inches; additional outlets on special order. Special lengths are also available for application on production benches and machines.

For further information on this new, convenient, flexible and efficient system of power distribution contact your nearest Ⓐ representative (he's listed in Sweet's) or write for Bulletin No. 704.

[ Plugin Ⓐ Busduct is available to meet the need for greater capacities—225 to 1,000 amps, 600 volts. Bulletin No. 701 contains complete information. ]



**Frank Adam Electric Co.**

**ST. LOUIS 13, MISSOURI**

**Makers of BUSDUCT • PANELBOARDS • SWITCHBOARDS • SERVICE  
EQUIPMENT • SAFETY SWITCHES • LOAD CENTERS • QUIKHETER**



THE ONLY FORM FOR  
STEEL JOIST CONCRETE  
FLOORS AND ROOFS

# Corruform



## ECONOMICAL

### CORRUFORM

sheets are easily placed. Fasteners are positive for all common joists and beams. Lapping is automatic. No sag or material waste. Concrete is placed and finished by common practice.



## SAFE

### CORRUFORM

is nearly twice as strong as ordinary steel of equal weight. Tough tempered to spring back under abuse. Provides a secure form for trades and concrete—no side pull on joists, beams, or walls.



## CLEAN

### CORRUFORM

is true and level. No cleanup necessary on floors below, no unsightly leakage. Bright, decorative corrugated pattern for exposed ceilings. Corruform is available plain, galvanized or vinyl-primed for painting.

## SPECIFICATION

Standard weight Corruform with 2 3/16 inch wide, 1/2 inch deep corrugations. Weight .72 lbs. per sq. foot. Guaranteed average strength of 100,000 psi.—single test minimum strength 95,000 psi.

## GRANCO STEEL PRODUCTS CO.

(Subsidiary of GRANITE CITY STEEL CO.)

Granite City, Illinois



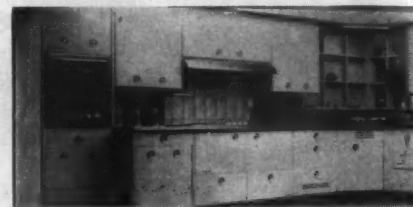
## Architectural Engineering

### PRODUCTS

(Continued from page 174)

### Kitchens

Custom-tailored to taste, size and purse, *Custom Kitchen* units incorporate a wide range of colors as well as many useful efficiency devices for the contem-



Kitchens feature custom-designed units in variety of colored finishes

porary kitchen. Among these are the lazy susan feature for enclosed corner storage spaces, ventilator hood directly over the stove, etc. Available are bars, built-in dinettes, eating nooks, household "planning" desk, and there is a selection of colors in the durable plastic for counter tops. The kitchens are custom designed and made on special order. Custom Kitchens, Inc., 141 East Post Rd., White Plains, N. Y.

### Revolving Storage-Door For Closets

*Revolodor* is a new storage-door for closets, which swings on a central ball-bearing pivot. The unit incorporates a chromium bar which is said to be able to support 125 garments, shelves for shoes and hats, and a cabinet with shelves and full-length mirrored door. When closed, the door may be treated as a matched portion of the wall space, or styled as desired. Corners of the closet may be fitted with built-in curved shelves to utilize waste space. The door units may be fashioned to fit into an ordinary closet. The manufacturers recommend the unit as a means of acquiring more storage room in existing

(Continued on page 178)

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page 178)

RECORD

Cooper-Bessemer Corp. Calls Kodagraph Autopositive Paper

## Low-Cost Insurance against costly shop errors

● Cooper-Bessemer, leading manufacturer of engines and compressors located in Mt. Vernon, Ohio, must supply its branch factory with intermediates (print-making masters) of home-office drawings.

But they realize that poor intermediates—like poor tracings—often produce illegible shop prints ... which, in turn, can lead to costly errors on the production line.

It doesn't pay to take chances when thousands of dollars are at stake. Therefore, Cooper-Bessemer makes intermediates on Kodagraph Autopositive Paper, which reproduces original detail as dense photographic black lines on a clean, evenly translucent paper base.

**These intermediates assure highly legible shop prints at Cooper-Bessemer's branch plant in Grove City, Pa.**



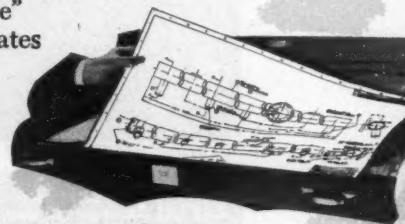
Even after hundreds of machine feed-throughs, Autopositives produce sharp, clean prints which are easy to read. And there's another advantage—print production is simplified, for Autopositives can be run at uniform, practical machine speeds—without frequent adjustments.

City, Pa. Even after hundreds of machine feed-throughs, Autopositives produce sharp, clean prints which are easy to read. And there's another advantage—print production is simplified, for Autopositives can be run at uniform, practical machine speeds—without frequent adjustments.

**Extending Use of Autopositive.** The assembly lines at Cooper-Bessemer's home plant are also seeing shop prints produced from Autopositives—will soon see many more. Plans are under way to protect some 50,000 valuable originals against the



**Photo-lasting in the files.** The original drawings are 200 miles away, but Cooper-Bessemer's Grove City plant has full confidence in its 100% "Autopositive File"—no worries about intermediates fading, becoming brittle, or otherwise deteriorating. Another important "extra."



wear and tear of print-making by reproducing them on low-cost "Autopositive." The same production routine currently employed will be followed: *exposure* in a direct-process machine; *development* in standard photographic solutions.

## Kodagraph Autopositive Paper

"THE BIG NEW PLUS" in engineering drawing reproduction

MAIL COUPON FOR FREE BOOKLET

**EASTMAN KODAK COMPANY**  
Industrial Photographic Division, Rochester 4, N. Y.

Gentlemen: Please send me a copy of your illustrated booklet giving all the facts on Kodagraph Autopositive Paper.

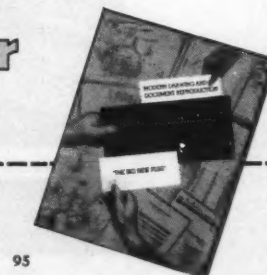
Name \_\_\_\_\_ Position \_\_\_\_\_  
(please print)

Company \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

- It enables you, or your blue-printer, to produce positive photographic intermediates directly at a new low cost. No negative step—ever!
- It enables you to protect valuable originals from wear and tear.
- It gives you photo-lasting file copies.
- It restores old, worn drawings ... reproduces opaques.



95

**Kodak**  
TRADE-MARK



## PRODUCTS

(Continued from page 176)

structures. When the door is opened, the closet area can be used as a dressing room. Revolvodor Corp., 1520 E. Slavson Ave., Los Angeles 11, Calif.

### Back Siphon Preventer

The new *Speakman* vacuum breaker or back siphon preventer for flush valves is said to be simplified in construction, with all working parts easily and quickly replaceable. The unit consists of three parts — body, water valve and washer. The body is brass and measures 3-in. in height. It is chrome plated on all exterior surfaces. The unit is furnished with 1½-in. OD slip outlet, and for ¾- or 1¼-in. OD flush connection. The water valve is brass and is easily lifted from the body for repair or replacement. The unit is claimed to be effective in breaking all vacuums which may cause back siphoning. Speakman Co., 30th and Spruce, Wilmington, Del.

struction, with all working parts easily and quickly replaceable. The unit consists of three parts — body, water valve and washer. The body is brass and measures 3-in. in height. It is chrome plated on all exterior surfaces. The unit is furnished with 1½-in. OD slip outlet, and for ¾- or 1¼-in. OD flush connection. The water valve is brass and is easily lifted from the body for repair or replacement. The unit is claimed to be effective in breaking all vacuums which may cause back siphoning. Speakman Co., 30th and Spruce, Wilmington, Del.

### Home Fire Alarm

The *Morse Home Fire Alarm*, a low-cost automatic fire protective system for homes, is said to sound a loud warning within seconds after a fire starts any place in the building.

The system employs small detector units, placed in a strategic position in each room of the house, and in the basement, attics and stairwells. All wiring is hidden. If the temperature rises above 150 to 160 degrees, a metal link is broken, creating an electric circuit and sounding the alarm. In the event of a between the wall fire, where all the wires are placed, plastic insulation melts and completes the circuit. As an added safety measure, a light on the control box operates as long as the system is in working order. The system can also be used as a burglar alarm. A test button, usually placed in the master bedroom, can be sounded to set the alarm into action. International Morse Products, 5005 Euclid Ave., Cleveland, Ohio.

### Paint Coordinates with Color System

With *Nu-Hue Custom Color*, manufacturers state, needless time spent mixing paint on-the-job to meet color requirements has been eliminated. Based on the Ostwald color system and in conjunction with a *Color Harmony Manual* (published by the Container Corp. of America) 30 color hues, with their variations,

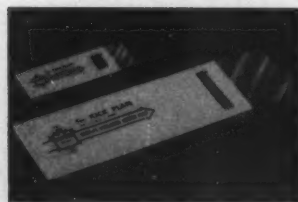
WHEN PLANNING DISTINCTIVE BUILDERS HARDWARE for . . .

PUBLIC BUILDINGS  
HOSPITALS  
SCHOOLS  
OFFICE BUILDINGS  
HOTELS, ETC.

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CIPCO CUSTOM BUILT ARCHITECTURAL HARDWARE



CIPCO PACKAGED PUSH AND PULL BARS, PUSH PLATES AND KICK PLATES

Your favorite Architectural Hardware Consultant will be happy to work with you in specifying and selecting CIPCO Hardware. Our Custom Built department is organized to produce any design desired . . . or we can suggest appropriate layouts. We are equipped to fabricate orders of any size — in brass, bronze, aluminum and stainless steel . . . on prompt delivery schedules. For quality . . . smart appearance and enduring service . . . specify CIPCO all around.

CIPCO originated the method of packaging kick plates and push plates as illustrated. Size, style and finish are clearly indicated and screws are enclosed. This method makes for ease of itemization. Also helps prevent mistakes in selection . . . saves time in installation.

Our latest Catalog No. 49 can be obtained from your Hardware Consultant or write us—Dept. R.

Manufacturers of  
Fine Hardware for 25 Years



CIPCO CORPORATION

22nd and COLE STREET • ST. LOUIS 6, MISSOURI



New paint line is coordinated with standard color system for precise matching

may be obtained readily. The paint colors have numbers corresponding to sample chips in the manual. Thus, once a color plan has been established it is only necessary to order paint by the numbers from a dealer. The Martin-Senour Paint Co., 2520 S. Quarry, Chicago 8, Ill.

(Continued on page 180)

# B & G *Hydro-Flo* Heating

WITH RADIANT BASEBOARDS

FOR RADIANT  
SUNNY WARMTH  
AND  
BEAUTY TOO



## THREE GREAT COMFORT-ECONOMY FEATURES!



WARMTH AS SOOTHING  
AS SUNSHINE



YEAR 'ROUND  
HOT WATER



LOW OPERATING  
COST

No wonder this combination for winter comfort and home beauty is being installed in so many new homes!

Consider these features: Radiant sunny warmth from heating units which look like conventional wooden baseboards and are just as unobtrusive! No over or under-heating—the B & G *Hydro-Flo* System automatically adjusts the heat supply to the weather! Heat is evenly distributed—draftless—virtually the same temperature from floor to ceiling!

Next, an all year 'round supply of hot water for kitchen, laundry and bath, heated by the same boiler that heats the house. Plenty for automatic washers, showers—and at amazingly low cost!

And finally—fuel economy! The automatic modulation of the heat supply prevents fuel waste—keeps heating cost at rock bottom. This accurate control is especially valuable in spring and fall, when only a little heat is needed.

Write for descriptive literature.

B & G *Hydro-Flo* Equipment can be installed on any hot water heating boiler

- 1 B & G Booster—An electrically operated pump which circulates hot water through the baseboards.
- 2 B & G Flo-Control Valve—Helps keep home temperature constantly at the comfort level.
- 3 B & G Water Heater—Provides an abundance of year 'round, low-cost hot water.



## BELL & GOSSETT

Dept. BX-32, Morton Grove, Ill.  
Canadian Licensee: S. A. Armstrong, Ltd.,  
1400 O'Connor Road, Toronto, Canada

*Company*

\*Reg. U. S. Pat. Off.



## PRODUCTS

(Continued from page 178)

### Plywood

Three new building-panel products include extra long plywood produced by scarf jointing standard length panels of Exterior Douglas fir plywood, a plastic-surfaced plywood, and a new hardboard for construction and industrial uses. The long panels are of *Armorbond* ply-

wood, and are made of special inner-ply construction with solid core veneer and waterproof adhesives. There is a choice of face and back veneers. Scarf joints are said to be perfectly tapered and to have a strong, durable bond. The panels are expected to find use as soffits and marquees, siding, counters, displays, and marine construction. Standard panel sizes include: thicknesses of  $\frac{1}{4}$ -,  $\frac{3}{8}$ -,  $\frac{1}{2}$ -,  $\frac{5}{8}$ -, and  $\frac{3}{4}$ -in.; widths of 4- and 5-ft; and lengths of 12-, 14-, 16-ft and longer.

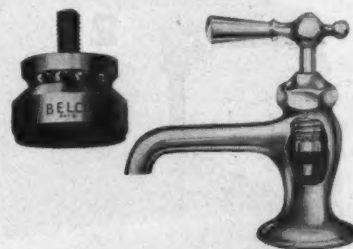
The plastic-surfaced plywood, called

*Armoron*, uses exterior type plywood as the base panel. The overlay surface is of resin-impregnated fiber, and is said to be hard, smooth and highly abrasion resistant. One grade is made for general industrial uses; a second grade is for re-usable concrete form construction. The standard size is 4-by 8-ft with a range of thicknesses. Other sizes are available.

The panel hardboard is called *Armorbord*, and is made by a "semi-dry process" of converting wood fiber into a panel material. It is said to have a smooth surface, dimensional stability, high strength and ease of fabrication. Anacortes Veneer, Inc., Anacortes, Wash.

### Ball Bearing Faucet Washer

The *Belco Ball Bearing Faucet and Valve Washer* is said to be designed to prevent leaking, dripping faucets. The unit is said to press down gently and firmly on the seat with no grinding, the twist being taken by the ball bearings.



Faucet washer uses ball bearings for long wear and positive cut-off action

The unit is available for installation on all standard faucets as a washer replacement. Fixtures are also available with the washer installed as original equipment. Economy Valve Co., 5919 Tireman Ave., Detroit 4, Mich.

### Lightweight Conveyor

The lightweight *Champion Monorail Type Conveyor* is a flexible, sectional unit designed for use as a bench, overhead or portable conveyor system. It is made in straight sections in multiples of 2 ft up to a maximum of 10 ft, with elbows, 45's, etc., similar to standard pipe. The system is said to be simple to erect, and to rearrange as needs change. Any flow route desired can be arranged.

The conveyor accommodates approximately 3 hangers per ft, with a 25 lb capacity per ft. Forms permit a horizontal bend from a straight or weaving line

(Continued on page 182)



Design approved by  
Oak Ridge Institute of Nuclear Studies

Safe handling of radio-active isotopes is as *special* a job as it is an *important* one. That's why Kewaunee designed this entirely new "Fume Hood of the Future."

The ducts, hood interior, trough and working surface are made of stainless steel. New hood design and baffle system assure a uniform, low-velocity flow of air... prevent gases from being carried back toward the face of the hood by reverse eddies or turbulence. No auxiliary duplicate duct system for incoming air is required. The working surface is specially braced to permit a safe loading of 4,000 pounds.

If you're handling, or planning to handle, radio-active materials, it will pay you to write for our literature describing the new Kewaunee No. 3600 Fume Hood.

We manufacture all types of  
Stainless Steel Equipment for  
Radio-Active Laboratories  
Representatives in Principal Cities

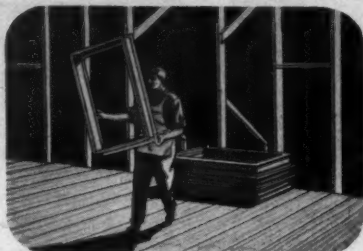
5046 SOUTH CENTER STREET

**Kewaunee Mfg. Co.**

C. G. Campbell, President

ADRIAN, MICHIGAN

Completely Installed  
in  
5 minutes!

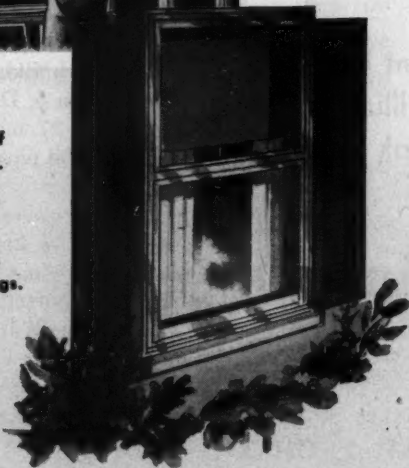


Complete rainproof  
ventilation control.

Automatic positive  
locking.

Pay for themselves  
through fuel savings.

Sturdy tubular  
construction.



Remember this name

**RUSCO**



HOT-DIPPED GALVANIZED

**PRIME WINDOW**

(VERTICAL SLIDE)

...a simple solution to your window problems!

- ★ FACTORY-PAINTED, COMPLETELY ASSEMBLED  
... READY TO INSTALL
- ★ COMES COMPLETE WITH METAL OR WOOD  
CASING (SURROUND)
- ★ DOUBLE GLASS, SCREEN & WEATHERSTRIPPING  
IN ONE UNIT. (INSULATING SASH OPTIONAL)
- ★ A QUALITY PRODUCT COMPETITIVE WITH  
LOWEST-PRICED UNITS

Cost ... rusting ... corrosion ...  
field labor ... maintenance —  
these are the window problems you  
must constantly seek to solve.  
Thorough investigation will convince  
you that no other window so  
completely answers *all* of these  
problems and offers so many  
advantages, to you and your  
customers, as the remarkable new  
RUSCO PRIME WINDOW. Call your local  
Rusco Prime Window distributor  
or mail coupon for full information.



Panels easily  
removed from inside

**The F. C. RUSSELL Co.**

CLEVELAND 1, OHIO

Manufacturer of famous Rusco Armco-metal  
Combination Windows, Combination Doors,  
Porch Enclosures, Awnings and Jalousies.



**THE F. C. RUSSELL COMPANY**

Department 7-AR 21, Cleveland 1, Ohio

Gentlemen: Please send me catalog of informative data  
and specifications on Rusco Prime Windows.

Name ..... Title .....

Company .....

Address .....

City ..... Zone ..... State .....



## PRODUCTS

(Continued from page 180)

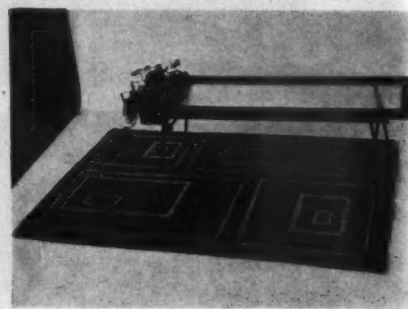
to a 180 degree reverse turn in a radius of  $3\frac{1}{2}$  in. or less. Parallel lines can run as close as  $1\frac{1}{8}$  in. apart. A vertical bend 90 degrees straight up or down may also be made. One fractional-horsepower motor is said to drive several hundred feet of belt. Lightweight Conveyor Co., 18690 Lauder Ave., Detroit 35, Mich.

## New Rugs, Wallpapers and Fabrics

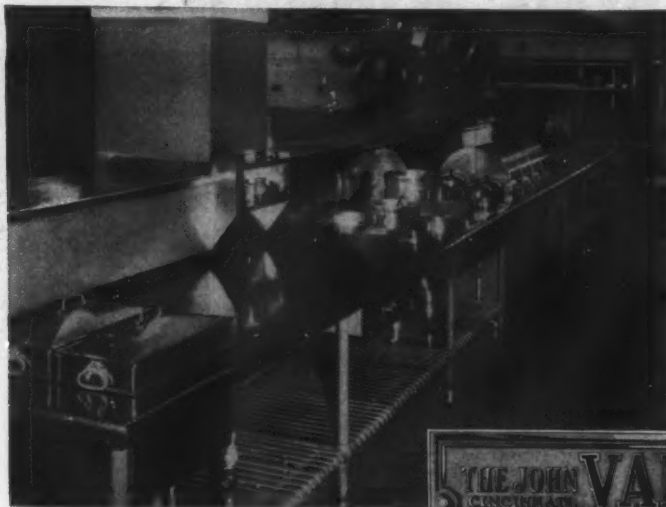
Raymor presents a collection of new hand-hooked accent rugs, hand-screened wallpapers and fabrics by modern designers. The seven rugs are done by Angelo Testa. Primarily abstract, they are available in standard rug sizes, from 4 by 6 up to and including 12 by 18; and come in three textures: all-shear, all-loop, and loop-shear. They are available in a range of 25 colors, on request.

The *Stimulus* wallpapers, according to

the company, were designed to complement the *Stimulus* fabric collection. The eleven designs are "interpretations, rather than duplications" of the fabrics. The papers come in a variety of color schemes, keyed to the fabrics, and plain solid colors to match are also available.



Hand hooked rugs feature abstract designs in variety of effective colors



## at outstanding kitchens you look for Van's mark

● When you see an unusually fine food service installation, you will undoubtedly find Van's name plate on the equipment. It is like the name Sterling on the silver you cherish.

● If you are planning food service equipment improvements, make use of Van's skill and experience. Illustrations of such installations are in Van's Centennial Book of Installations. Write for it.

# The John Van Range Co.

EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD

DIVISION OF THE EDWARDS MANUFACTURING CO.

Branches in Principal Cities

429 CULVERT STREET

CINCINNATI 2, OHIO

Six new fabrics, each by a "noted designer" have been added to the *Stimulus* collection, according to the distributors. The patterns are mainly abstract, and include horizontal, vertical and plaid motifs. All, it is said, are available in several color combinations. Raymor Division, Richards-Morganthau, distributors, 225 Fifth Ave., New York, N. Y.

• A new non-profit research organization has recently been formed by leading independent miners and processors of vermiculite to increase and diffuse the knowledge and uses of vermiculite in widely diversified fields. The organization will be known as The Vermiculite Association, Inc., with headquarters in New York City.

• The Cast Iron Soil Pipe Institute announces the opening of new offices in the Heurich Bldg., 1627 K St., N. W., Washington 6, D. C. This organization represents 27 major manufacturers of cast iron soil pipe and fittings.

• The Borg-Warner Corp. announces separation of its Ingersoll Steel Div., into two distinct and independently operated manufacturing units. One unit, with steel mills at New Castle, Ind., will continue to be known as the Ingersoll Steel Div. The other, with plants in Chicago and Kalamazoo, Mich., will bear the name of the Ingersoll Products Div.

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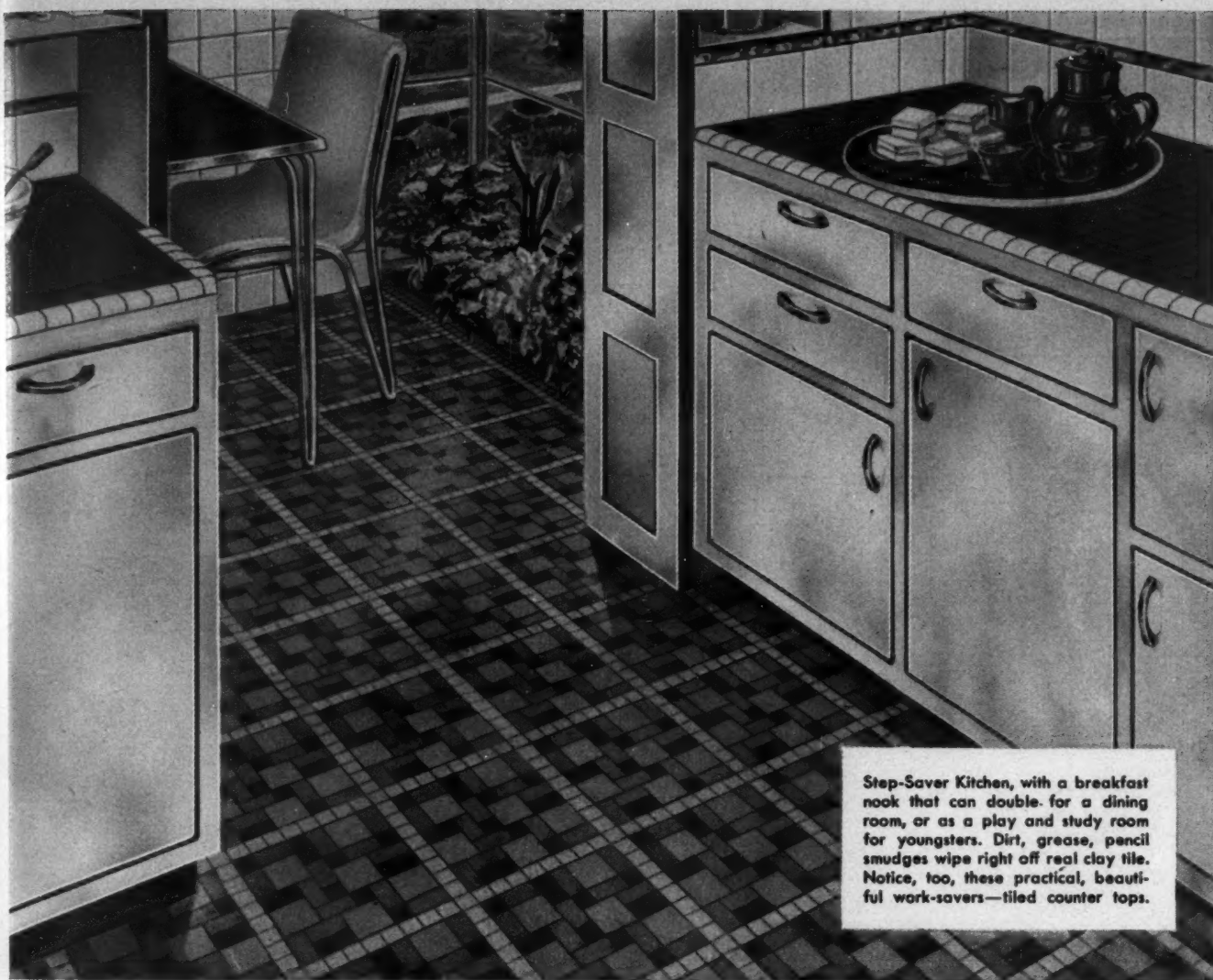
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CORD



Step-Saver Kitchen, with a breakfast nook that can double for a dining room, or as a play and study room for youngsters. Dirt, grease, pencil smudges wipe right off real clay tile. Notice, too, these practical, beautiful work-savers—tiled counter tops.

## SATISFY TODAY'S DEMAND FOR COLOR *with the permanent beauty of tile*

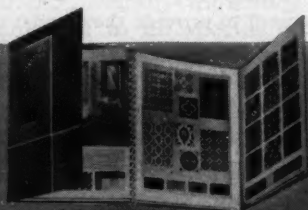
Here is the smart buy for the luxury look—American-Olean real clay tile. Colors are fired in... they can't fade, streak, wash off, stain or discolor.

There are no complaints from home owners, no regrets from home builders, when they have American-Olean walls and floors. Your clients can

be sure of the sparkling, clear colors they want... and you and they can forget about maintenance worries forever.

You'll find that American-Olean real clay tile costs no more than many "substitute" materials.

**FREE! THE  
COLOR BOOK  
OF TILE**



### Your Quickest, Easiest Way to Specify Tile

The most complete, most helpful tile book ever produced. 100 pages, including 30 of typical installations in full color; plus color charts of wall and floor tile, trim and hand decorated inserts. Full architectural data and ready-to-use specifications. If you have not yet received your copy, or if you need another, write today.

**AMERICAN-OLEAN TILE COMPANY**

Executive Offices, 925 Kenilworth Ave., Lansdale, Pennsylvania

*It's Real Clay Tile*





## What would happen to him in case of a HOTEL FIRE?

What would his chances of safety be, if he woke up in the middle of the night with smoke pouring in over the transom?

His chances might be slim in a hotel of flammable construction without these protections: fire alarms to arouse sleeping occupants before heat and smoke make halls and stairways untenable . . . fire extinguishers and hose equipment throughout the building . . . adequate separate means of exit, available from all parts of the building . . . stairways and shafts protected by fire-resistant enclosures with fire doors . . . fire walls to subdivide large floor areas.

His chances would be favorable in a hotel of fire-resistant construction, with the above protections.

But his chances would be excellent in a hotel adequately and properly protected by an automatic sprinkler system such as Grinnell offers. Nearly sev-

enty years experience proves this. Grinnell Automatic Sprinkler Systems check fire at its source, whenever and wherever it strikes, night or day, with automatic certainty. So, for safety in hotels . . .



### SEE THAT GRINNELL SPRINKLER HEADS ARE ON GUARD

In hotels, as well as in schools, hospitals, theaters and factories, there is a moral obligation upon architects and management to provide the utmost in protection of life and property. For your own sake be sure the hotels, hospitals, the plants, and the schools for which you are responsible are protected with Grinnell automatic sprinkler heads — your assurance of positive, automatic fire protection. Grinnell Company, Inc., Providence, Rhode Island.



# GRINNELL

FIRE PROTECTION SYSTEMS

YOU CAN BE **SURE**... IF IT'S  
**Westinghouse**

Don't be a  
**FIXTURE  
PICKER!**



They'll never find a "bargain in lighting" by "picking fixtures". Yet you meet hundreds like this every day. And so do we.

No *one* fixture will solve all lighting problems.

There are, in fact, literally thousands of luminaires engineered to do specific jobs. One may be the right answer—or it may take two or three.

Good lighting combined with practical economics takes the services of a qualified lighting engineer.

Whether you plan lighting, buy lighting or install lighting, the services of a Westinghouse lighting engineer are available to you.

J-04280



**Westinghouse**  
**PLANNED  
LIGHTING  
PAYS**





## HEAT, SMOKE AND FUMES CUT PRODUCTION • FOSTER SPOILAGE



## BURT MONOVENT BOOSTS PRODUCTION EFFICIENCY

No workman can do his best in bad air. Output suffers—rejects rise—accidents and absenteeism increase.

Adequate ventilation with Burt Ventilators is a quick, simple solution to the problem. Burt's complete line includes a size and type for every ventilating need. More than half a century of ventilating know-how assures top efficiency and satisfaction.

SEE SWEET'S OR WRITE FOR CATALOG AND DATA SHEETS

*The* **BURT MFG. Co.**

48 E. South Street

Akron 11, Ohio, U. S. A.

VENTILATORS • LOUVERS • OIL FILTERS • SHEET METAL SPECIALTIES

### Architectural Engineering

#### LITERATURE (Continued from page 150)

##### Wood Veneer

*Architectural and Decorating Problems Solved with Flexwood.* Portfolio describes a flexible sheet wood, its application and use in many types of buildings. Illustrated are banks, offices, showrooms, theaters, reception rooms, stores, lobbies, restaurants, bars, etc., which have employed this type of finish for both round and flat surfaces. Installations in various patterns and grains are shown. 8 pp., illus. United States Plywood Corp., Dept. F., 55 West 44th St., New York 18, N. Y.\*

##### Photographic Murals

*Photographic Murals.* Shown here are the types of and uses for photographic murals for wall areas. Suggestions for reproductions are maps, old prints and photographs of historical significance, paintings, local community industry or scenery and photographs of a company's products or processes.

Such decorations are described as being effective for modernization and decoration of offices, reception rooms, industrial plants, institutions, hotels, restaurants, etc. Murals can be made in single photographs as well as with montage designs. 8 pp., illus. Hagstrom Co., Inc., 311 Broadway, New York, N. Y.

##### Wood Construction Systems for Recreational Buildings

*Timber for Recreational Buildings (11-50-20M).* Booklet shows Lamella construction, glued laminated construction and the Teco Connector system used in various sections of the country for the design of many types of recreational structures. These include field houses, drill halls, indoor swimming pools, orchestra shells, bleachers, arenas, curling and skating rinks, gymnasiums, club houses, etc. Illustrations include both finished buildings and various stages of construction. A page lists additional lumber literature available from the National Lumber Manufacturers' Assn. and the Timber Engineering Co. 24 pp., illus. The Timber Engineering Co., 1319 18th St., N. W., Washington 6, D. C.

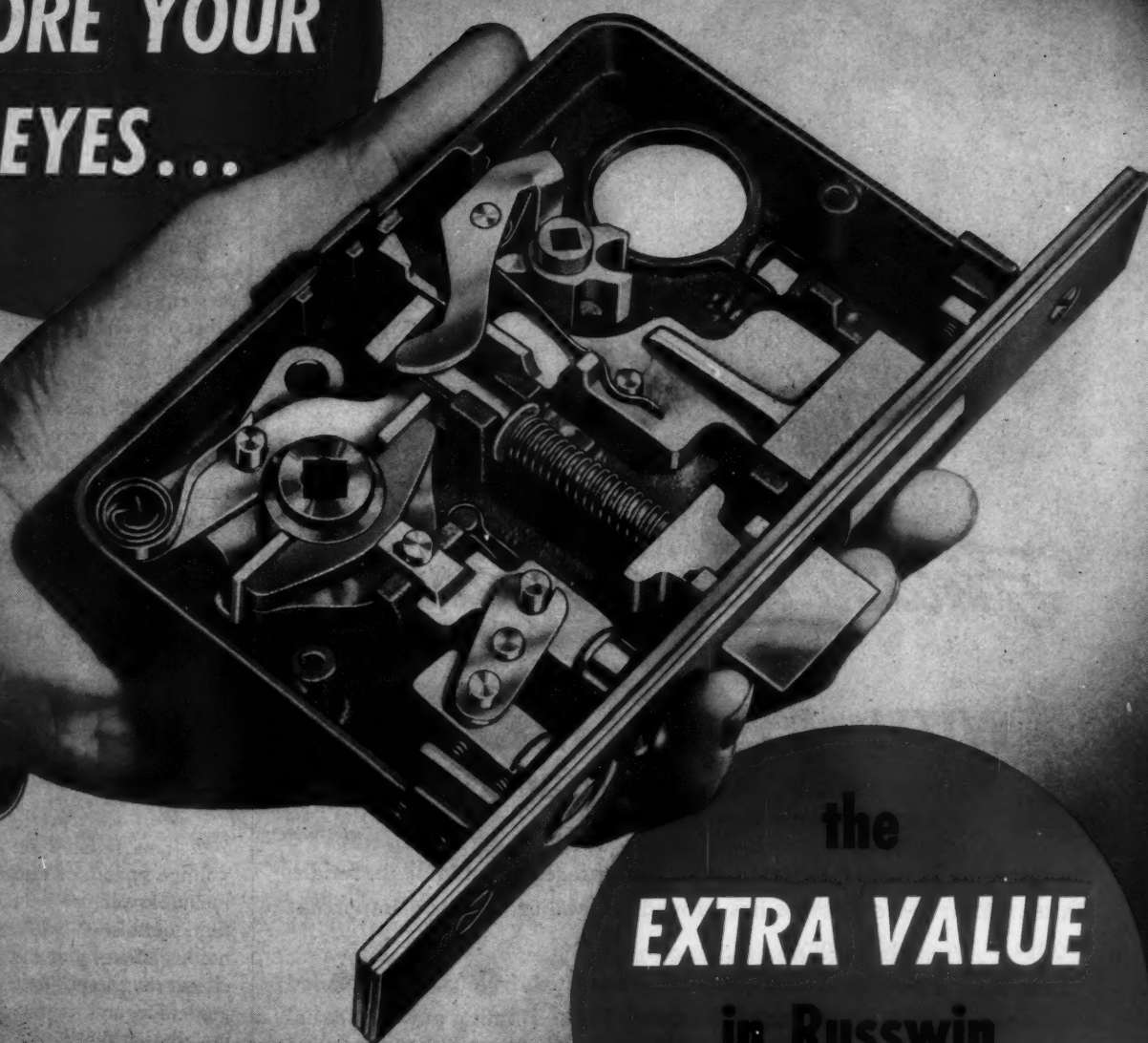
(Continued on page 188)

With the cov  
Lock features  
construction  
with armored  
steel . . . the  
manent align  
Mortise Lock  
free service .

There are  
Strike" Line  
the famous  
One size mo  
reversible, ch

Recommen  
Lock Line. W  
Hardware Co

**RIGHT  
BEFORE YOUR  
EYES...**



the  
**EXTRA VALUE**  
in Russwin  
"Ten Strike"  
Locks

With the cover off the case, it's easy to spot the Russwin "Ten Strike" Lock features that add up to *extra value*. Notice the exceptionally sturdy construction throughout . . . the forged brass knob hub and brass front with armored scalp . . . the heavy, formed, interior parts of rust-resisting steel . . . the smooth precision-made case that holds the parts in permanent alignment. Features like these have put Russwin "Ten Strike" Mortise Locks in a class by themselves for exceptionally long, trouble-free service . . . proving the economy of quality.

There are over 800 possible lock combinations in the Russwin "Ten Strike" Line . . . made from three base locks in two backsets. All have the famous Russwin Adjustable Ball Bearing Pin Tumbler Cylinder. One size mortise for all functions. Since all "Ten Strike" Locks are reversible, changes in door swings will not add to the cost of hardware.

Recommend locks with the *extra value* . . . the Russwin "Ten Strike" Lock Line. Write for catalog. Russell & Erwin Division. The American Hardware Corp., New Britain, Conn.

SINCE 1839  
**RUSSWIN**  
DISTINCTIVE HARDWARE

*Proving the Economy of Quality*





## Finish the job faster WITH **Ramset** FASTENING SYSTEM

For fastening into steel, concrete, other hard processed building materials, RAMSET FASTENING SYSTEM has proved its ability to make important savings in time and money.

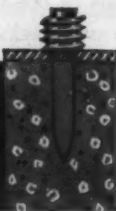
Less than a minute is needed to set a specified drive pin or threaded stud with the powerful RAMSET FASTENING TOOL. Holding power is equal to or greater than that obtained by old-fashioned methods. Work moves faster, one crew makes way for the next in less time—and your buildings are ready for occupancy far quicker.

From basement to roof, in thousands of large and small buildings, the engineered RAMSET SYSTEM has demonstrated its economies in time and money. Ask your local RAMSET Specialist for details and for help in selecting fastening work for which Ramset is especially advantageous. Or, write us for special Architectural Folder, showing typical applications and fastener specification.

Ramset Fasteners, Inc., 12117 Berea Road, Cleveland 11, Ohio.

Member of Producers Council

**Ramset Fastening System**  
*Pioneer in powder-actuated fastening*



### Architectural Engineering

#### LITERATURE

(Continued from page 186)

##### Air Conditioners

• *Governair Completely Packaged Air Conditioners.* Leaflet describes year-round air conditioning units for heating, ventilating, humidifying. Tabular, dimensional, standard rating and general descriptive data are included. 4 pp., illus. Governair Corp., Oklahoma City, Okla.

• *Servel All-Year Air Conditioner.* Booklet presents air conditioning units for use in homes, offices, shops. Heating and cooling cycles and control system are described; each section is accompanied by photographs. Specifications include operating, installation and application data and dimensions for the several models. Shown in addition are two models of evaporative water coolers for use with air conditioners. 8 pp., illus. Servel, Inc., Air Conditioning Div., Evansville 20, Ind.\*

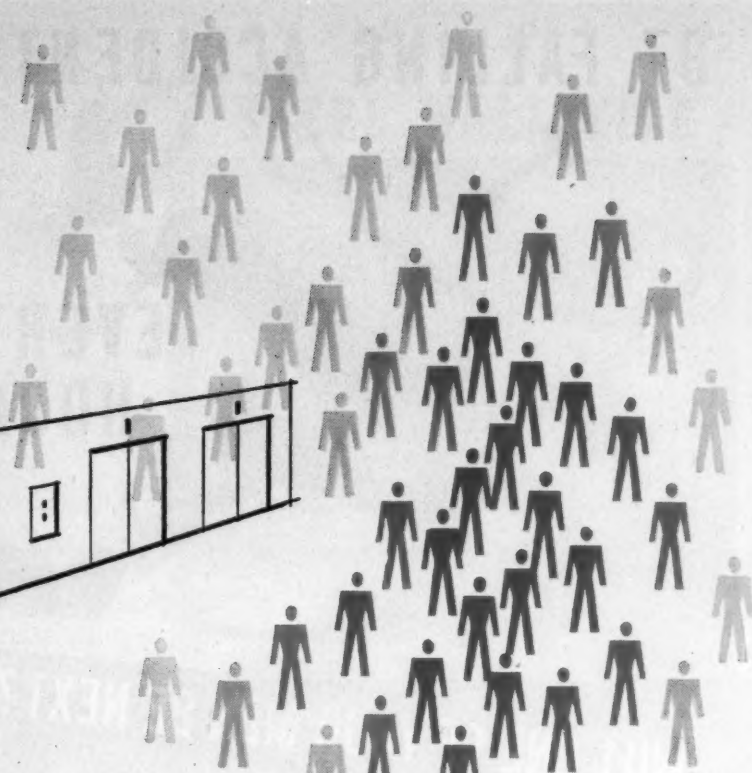
##### Remote-Control Wiring

*General Electric Publication No. 16-200.* This manual on G-E's new low-voltage system of remote-control wiring includes: picture visualization of system, details on where system may be used, pictures and data of components, circuit diagrams, suggested specification guide for architects and discussion of installation methods for new wiring and rewiring. 36 pp., illus. Construction Materials Dept., General Electric, Bridgeport 2, Conn.\*

##### Store Fixtures

(1) *Mobile-Line Fixtures*; (2) *Counter-Line Fixtures*; (3) *Architectural Data, Wall-Line, Center-Line, Counter-Line, and Mobile-Line Fixtures.* These booklets illustrate and describe a line of integrated, free-standing store fixtures. Details of the available component parts, and sketches of many types of fixtures which may be assembled from these parts. Notes are also included on sizes, uses and construction of the units. 12 pp., 12 pp., and 4 pp., illus. Grand Rapids Store Equipment Co., Grand Rapids 2, Mich.

(Continued on page 190)



## WITH SELECTOMATIC...

### FEWER ELEVATORS DO A BIGGER JOB

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Other Products: PERMACLAD Stainless Clad Steel • A.W. SUPER-DIAMOND Floor Plate  
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\*17% of the 222 occupational injuries which occur every hour are due to falls. Source: National Safety Council's 1949 edition of Accident Facts.

## Architectural Engineering

### LITERATURE

(Continued from page 188)

#### Wiring Connectors

Buchanan pres-SURE-connectors (Bulletin 750). Catalogue has illustrated description of Buchanan method of splicing and terminating electrical wires without soldering. Available splice caps, insulators, and terminal ends are also pictured. Data is included on sizes for use with various types of wiring and on a special tool used for installation. 4 pp., illus. Buchanan Electrical Products Corp., 1290 Central Ave., Hillside, N. J.

#### Industrial Doors

Security Industrial Doors. Leaflet describes sliding, folding and telescoping doors for industrial and commercial uses. Details, notes on operation and general arrangement of both power- and non-power operated doors are given. Photographs show typical installations. Data on materials and dimensions are also included. 4 pp., illus. Security Fire Door Co., 3100 Lambdin Ave., St. Louis 15, Mo.\*

### LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

Architectural Service, Southern Illinois University, 1217 So. Thompson St., Carbondale, Ill.

Joseph Bistransky, 630 W. 13th Ave., Gary, Ind.

Ida J. Bonicelli, The Architecture Library, University of Notre Dame, Notre Dame, Ind.

S. P. Bratton, Construction Engineer, St. Elizabeth's Hospital, Washington, D. C.

Harry Kalajian, 22 Hillcrest Circle, Watertown 72, Mass.

Krebill Engineering Co., P. O. Box 361, Keokuk, Iowa.

Robert S. Miller, 130 Hayden House, Ann Arbor, Mich.

William Gray Potter, Architect, 315 East Third Street, O'Fallon, Ill.

Larry Wirth, 20-20 36th St., Long Island City, N. Y.

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Grant No. 1 Residence Type Sliding Door Hangers provide a lifetime of perfect operation. They are precision fitted with a twin row of continuous ball bearings, upper row carrying the weight, lower set taking care of any up-thrust or twist load. The No. 1 hangers are especially suited for schools. They can be applied to libraries (as illustrated), wardrobe doors, supply closets, and numerous other types of school doors.

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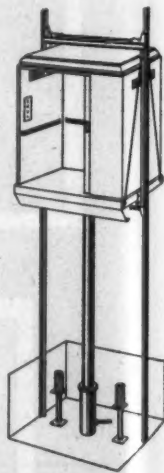
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A revolutionary new hydraulic power transmission system (Rota-Flow) moves Oildraulic Elevators on a continuous, pulsation-free column of oil. Vibration and pumping noise eliminated! Cushioned starts and stops are assured by Rotary's famous Oildraulic Controller. Automatic floor-leveling guarantees landings within  $\frac{1}{4}$  inch, regardless of load or speed. The Rota-Flow system operates with greater efficiency than any other oil-hydraulic power unit!



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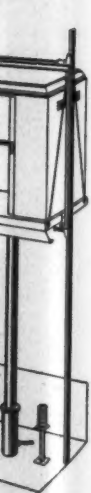
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← **ROTARY LEVA-DOCK . . .**  
**the self-leveling ramp for**  
**loading docks**

The Leva-Dock makes it possible to load directly into or unload from all types of trucks or trailers . . . without using steel plates, bridge ramps, or other slow and frequently dangerous methods. Here's how it operates: The Leva-Dock is positioned to truck bed height by a hydraulic jack. One end of platform is hinged into loading dock; other end automatically travels up and down as truck springs are relieved or compressed during loading or unloading. Write for Rotary Catalog RE-150.

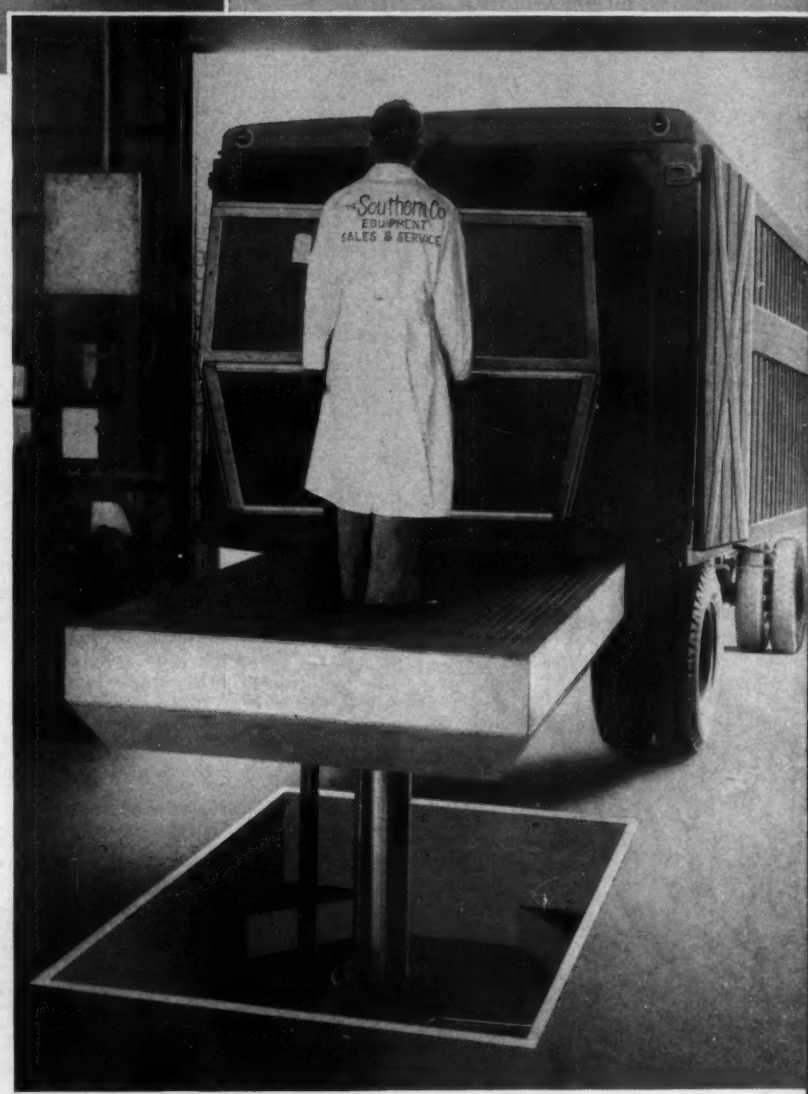
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**Oildraulic Elevators**  
**LEVELATORS, LEVA-DOCKS**

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## PRE-SCHOOLS

(Continued from page 101)

work depends on the healthy development of the child. The children can participate in preparations for the meal and set the table under the teacher's supervision. Particular care is taken for balanced diets. A rest period before luncheon helps the child to relax and be ready to eat. Young children need much rest and sleep. With increasing age, nap periods become shorter. While the shorter rest periods are usually taken on little

rugs on the floor, to the accompaniment of soft music, the afternoon nap is taken on small cots.

The play period in the afternoon after the nap is essentially not different from the one in the morning. The children leave the school at any time when the parent comes for them. In nursery schools with a full day program, an evening meal is served before the children go home. This practice increases the importance of nutrition, which will then require more extended facilities.

We have reviewed the day in a nurs-

ery school and discussed the main activities which take place indoors and outdoors. Since there is basically no difference between a nursery school and a kindergarten of today, the description will take care of both types of schools. After these observations, the architect will realize that all these often-so-different activities call for a large variety of space elements and involve a considerable amount of special equipment. Space has to be sufficient and well organized. If this can be achieved, a good school will result, the children's needs will be met, and the teachers will be pleased. And, although it is often erroneously believed a non-essential matter, the designer who provides a good solution will be adventuring on the road of artistic creation, something which certainly has great influence on the child's well being, directly and indirectly.

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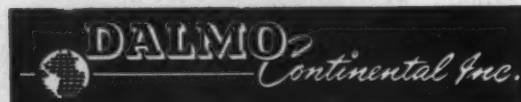


Julius Shulman Photo Seventeenth Church of Christ Scientist, Hollywood, Calif., Paul Robinson Hunter, Architect, A.I.A.

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For the Nation's Schools

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Eastern Sales Office: Thorntown, Indiana

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5. Neterer, Elizabeth and Ewen, Alice M.: *Portfolio for Nursery School Teachers*. Association for Childhood Education, Washington, D. C., 1944. Number of leaflets on nursery school problems. One is on "Housing the Nursery School."
6. "The Nursery School Program," from *Nursery Training School Program*, by the staff of the Nursery Training School of Boston. Manuscript.
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8. *Research Paper on Nursery Schools*, compilation of physical standards, written in connection with a design project under Doil S. Hammons, Instructor, College Station, Texas, Fall semester 1947. Manuscript. Mimeographed.

SPECIFY

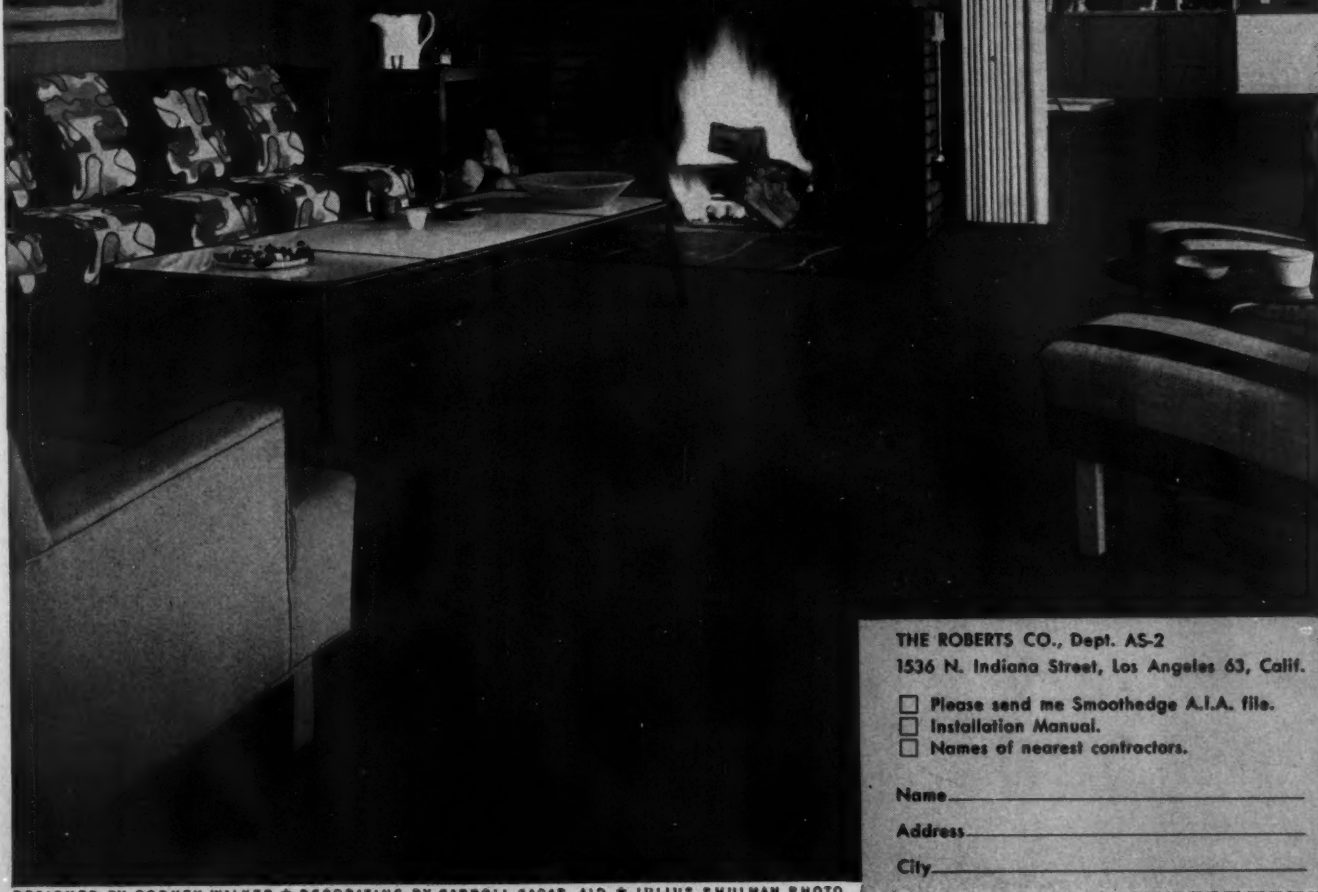
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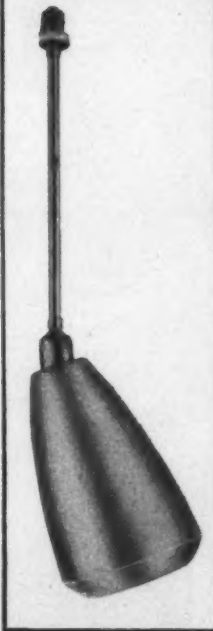
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## THE RECORD REPORTS

### WASHINGTON

(Continued from page 24)

#### More Money for Hospitals

The U. S. Public Health Service was prepared to divide another \$10 million among the states to aid in the construction of non-federal hospitals. This additional money was voted by the 81st Congress during the closing days of its final session. It came in the second supplemental appropriations bill for fiscal 1951 and boosted the total amount of federal aid for that fiscal period to \$85 million. The program is carried on under terms of the Hill-Burton Act which authorized the Federal Hospital Construction plan.

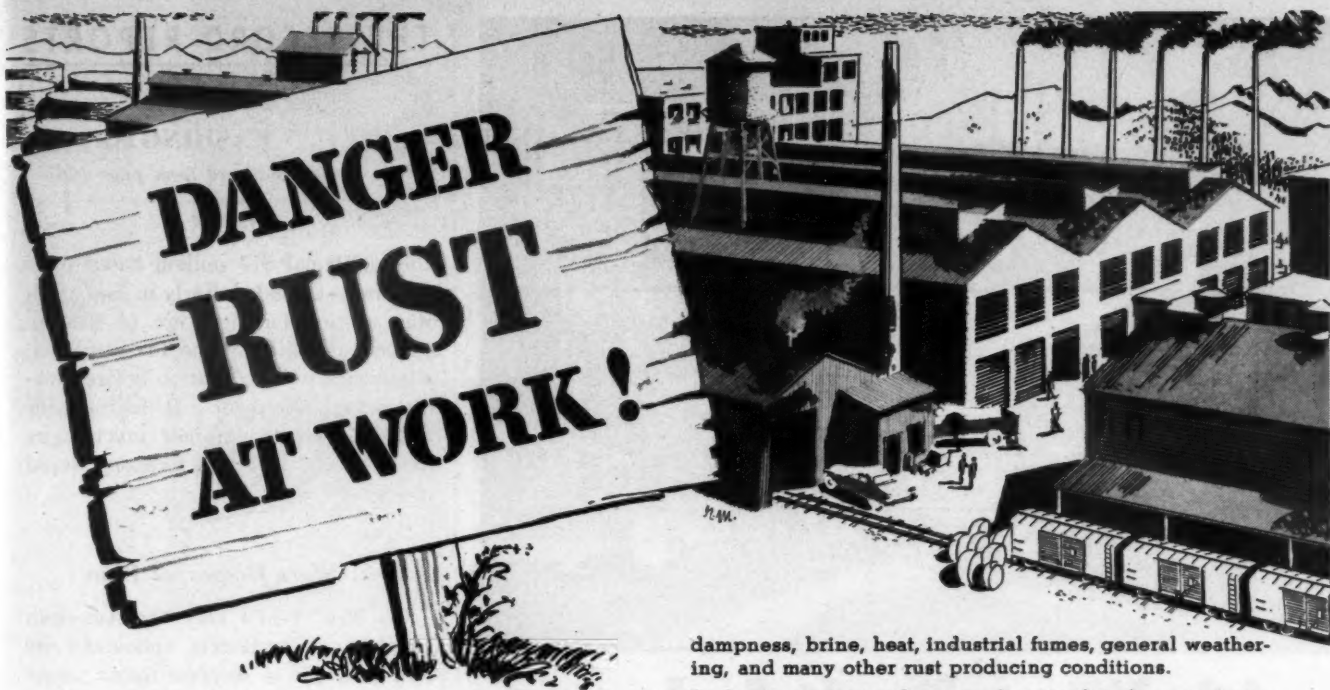
The Senate at one time tried to restore the \$75 million struck from the initial 1951 appropriation by the Budget Bureau when it halved the figure voted by Congress earlier last year. But House members would not go along with this. A conference committee on the second supplemental appropriations measure finally agreed upon the \$10 million additional outlay for fiscal 1951. This carries through to July 1. The fiscal 1952 proposed expenditure was carried in the President's budget submitted to Congress in mid-January.

The U. S. Public Health Service, at the first of the year, brought out a report covering Hill-Burton activities up to November 1, 1950. This showed the addition of 15 projects to the program during October. These occurred in one of the three status descriptions employed by USPHS for these hospitals — completed and in use, under construction, or approved but not yet under construction. These newer hospital jobs were listed for Alaska, Connecticut, Illinois, New York, North Carolina, Ohio, Pennsylvania and Tennessee.

Under the Act, the Federal Security Agency division pays roughly from one third to two thirds of the estimated cost of construction, with local sponsors paying the balance. When originally put through Congress, the law permitted payment of only one third by the federal government, but this was amended last year to allow payment of up to two thirds the cost in certain cases by the federal agency.

Public Health Service said it had made a preliminary division on paper of

(Continued on page 198)



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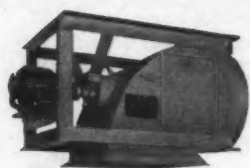
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## DRAFT INDUCERS

## THE RECORD REPORTS

### WASHINGTON

(Continued from page 196)

the additional \$10 million based upon the law as amended. Early in January it was waiting for signature of the appropriations bill by the President and administrative clarification before making actual allotments. It had specific figures, however, on how much more money each state and territory would receive.

### A.I.A. Offers Dispersal Plan

On New Year's Day the American Institute of Architects announced its own program to disperse major target areas in the United States by redirecting new plant construction and housing activity. The A.I.A. proposed the creation of new towns by this method, towns located in outlying parts of metropolitan areas.

Commenting on this lively topic of universal defense against bombing attack through dispersion of new construction on a large scale, Edmund R. Purves, executive director of the Institute, said:

"The new towns plan provides the safety of space—the only feasible pattern for a bombproof civilization.

"The authority of modern weapons may make it necessary to impose ceilings on the growth of our largest and most vulnerable cities. By channeling the new growth of metropolitan districts into outlying communities of substantial but limited size, clearly and widely separated by agricultural and park zones, we can reduce the number of worthwhile targets in an urban nation such as ours to an absolute minimum."

The case for such a solution to defense problems of this nature is carried through to more detail by Albert Mayer (Mayer & Whittlesey, New York City, Architects and Planners), new chairman of the A.I.A. committee on Urban Planning and Housing. Mr. Mayer is widely known for his planning of the new Indian capital of the East Punjab province.

Writing in the January *Journal* of the Institute, he recognized value in extensive decentralization as follows: "We must achieve the safety of space, which means new towns. The continuing sprawl of our cities won't do it. That will make only easier and more attractive targets

(Continued on page 200)

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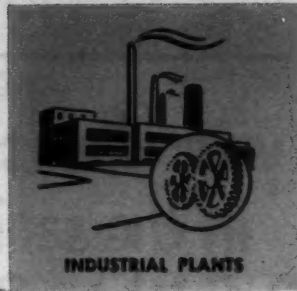
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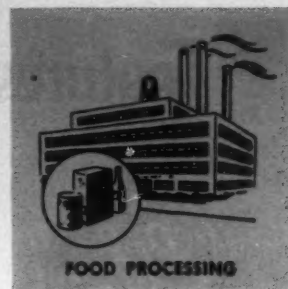
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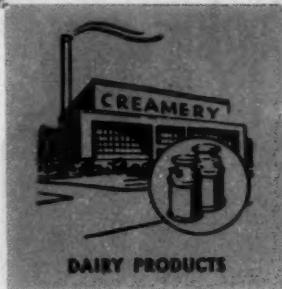
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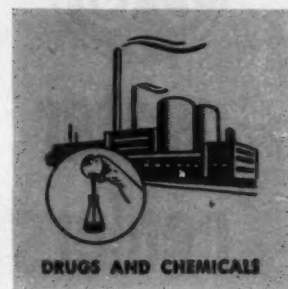
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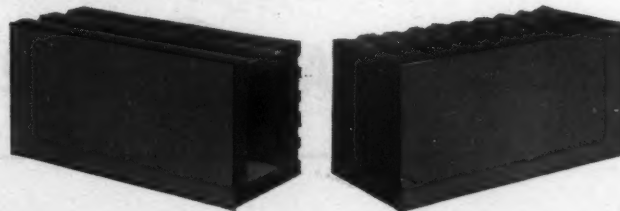
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Charleston, West Virginia

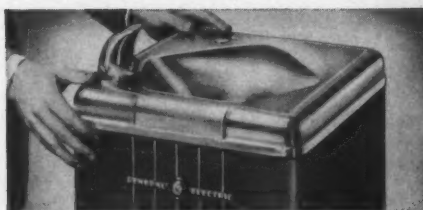




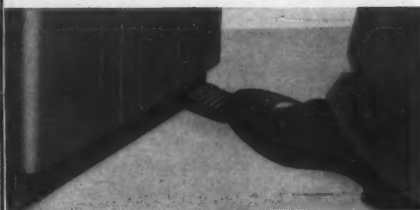
# Features your clients will like in the sanitary new G-E Water Cooler



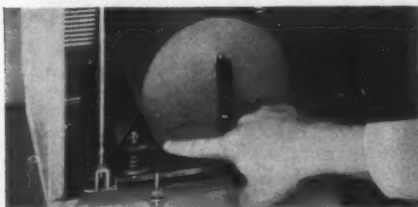
water  
coolers



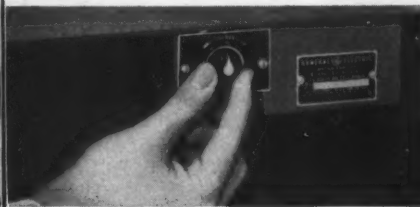
**STAINLESS-STEEL TOP**—Its handsome, satin-smooth Tampico Brush finish is easy to keep clean. Scientifically designed to prevent spillage. Sanitary—no crevices or corners to collect bacteria.



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CITY.....ZONE.....STATE.....

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## THE RECORD REPORTS

### WASHINGTON

(Continued from page 198)

that can't be missed. Moving out industries without housing and schools won't do it, and moving office buildings out of Washington won't do it."

Halfway decentralization and civil defense alone are not satisfactory answers to the big question, the author stated.

Mr. Mayer holds that the country must quickly face the fact that the whole job must be done—and started now. A great many decentralized communities could be started right away, he believes, and without excessive use of more materials. The nucleus for such a beginning is the large number of industries seeking decentralized locations. The Mayer plan would place this new factory construction in safer areas away from crowded metropolitan areas and let housing and community facilities follow it to the scattered areas. Three to four hundred thousand homes would make some 15 towns of 70,000 population each. There already is a sufficient highway network to locate these new centers without very serious extensions, Mr. Mayer argues.

On the subject of new towns, he wrote: "I need only remark that they also constitute the one real safety against bombing and biological warfare, for towns of 50,000 or 75,000 with greenbelts and five miles between do not offer profitable targets; that they are more continuously efficient because production will not be interrupted by bombings and evacuations; that each one built will offer a psychological and physical haven to those who work and live there; that their consummation will be an earnest to others still in the big cities; and finally that every such town created will progressively diminish the heavy load of civil defense."

One basic Mayer premise is that factory and office buildings, housing, roads, and other private and public construction programs already in operation can be reoriented to accomplish the building of new free-standing centers of employment and community life without extra laws and appropriations.

### Shorts

- The Administration clearly intends to continue with its public housing pro-

(Continued on page 202)



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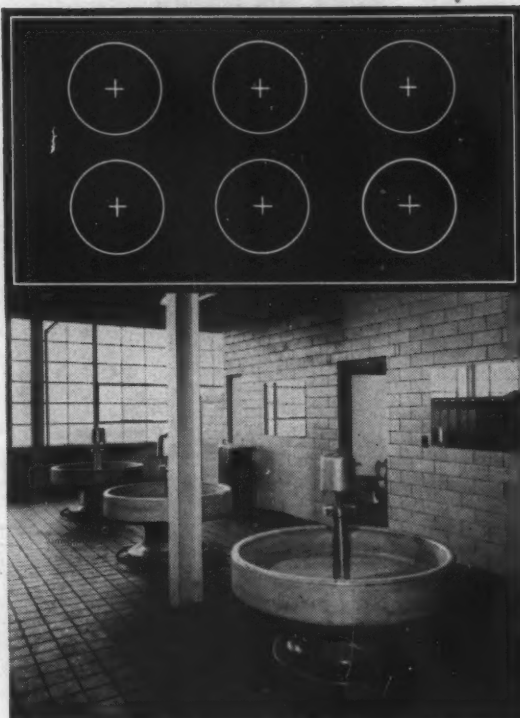
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Boston 10, Mass., Mills Engineering  
Buffalo 2, N. Y., M. S. Jackson  
Charleston 28, W. Va., Fireproof Prod.  
Charlotte 6, N. C., Wm. H. Shepard & Son  
Chicago 10, Ill., Struck Equip. Co.  
Chicago 11, Ill., West & Lasley  
Cincinnati, Ohio, Loftus-Shoenberger  
Cleveland 15, Ohio, Fielding-Wales Co.  
Columbus 15, Ohio, A. G. Peterson  
Dallas 1, Texas, W. E. Lewis & Co.  
Denver 4, Colo., Carl H. Roath Co.  
Des Moines 10, Ia., Ostrander-McDonald  
Detroit 1, Mich., D. T. Randall & Co.  
El Paso, Texas, Herlin Engineering  
Evansville 8, Ind., Shouse-Brill Mach.  
Fort Wayne 2, Ind., A. Frank Ausman  
Houston 6, Texas, Thos. E. Price  
Indianapolis 18, Ind., J. Edwin Aspinall  
Jacksonville 4, Fla., G. P. Coyle & Son  
Kansas City 2, Mo., Rivard Sales Co.  
Knoxville 12, Tenn., Chas. F. Sexton  
Los Angeles 33, Calif., Frank Peck Spec.  
Louisville 5, Ky., J. F. Shouse & Co.  
Memphis 3, Tenn., Geo. R. Douglas  
Milwaukee 2, Wis., J. R. Petley Co.  
Minneapolis 1, Minn., L. M. Bartlett  
Missoula, Mont., Horace A. Green  
Nashville 4, Tenn., Southern Sales Co.  
New Orleans 12, La., W. H. Grant, Jr.  
New York 17, N. Y., A. C. Cooper  
Oklahoma City 3, Okla., M. F. Fishell  
Omaha 2, Nebr., B. G. Peterson  
Philadelphia 8, Pa., Alec Hicks  
Phoenix, Ariz., Baker-Thomas Co.  
Pittsburgh 28, Pa., Paul V. Clarke  
Portland 4, Ore., Otto A. Cook  
Richmond 22, Va., Joseph F. Leonard  
Rochester 20, N. Y., C. A. Kolstad & Son  
St. Louis 8, Mo., Heinkel Sales Service  
St. Petersburg 1, Fla., Evan S. Hansard  
Salt Lake City 12, Utah, Lott & Parry  
San Francisco 5, Calif., Trask & Squier Co.  
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Spokane, Wash., Heating Assurance, Inc.  
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## THE RECORD REPORTS

### WASHINGTON

(Continued from page 200)

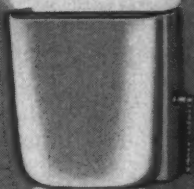
gram, at least up to the point of demolition of standing structures to clear tracts for the erection of low-rent shelter. Just before the first of the year President Truman okayed loans to local housing authorities in another 33 localities. This raised the number of places where such housing programs now have been authorized through such loan approvals to 661. Public Housing Administration, which administers the program, said the new White House approvals would enable local authorities to plan 2253 low-rent homes for 9012 persons in low-income families. It placed a value of \$19,150,500 on the amount of public housing thus to be planned.

• Among the more confusing of Washington operations in the mobilization program was that of the Economic Stabilization Agency. Well into last month there had been no concrete action from this organization on issuance of mandatory controls over prices and wages, for which it has the responsibility. Administrator Alan Valentine was hampered severely by lack of adequate staff. Price Administrator DiSalle conferred with small industry groups, including the vital metals—copper, steel, lead and zinc—and obtained promises there would be no price increases without notification of such intention at least 30 days in advance, in effect a temporary price freeze. Wage Administrator Ching conferred with labor and industry groups, including construction, in an effort to arrive at a basis for wage control policies. This was a particularly tough problem.

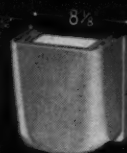
• To hasten industrial expansion, the National Production Authority established a Facilities and Construction Bureau headed by Frank R. Creedon, who is well known to the building industry. This move centralized under his direction all NPA functions relating to construction of new facilities for industrial expansion and defense. Creedon will continue to handle applications for federal aids to plant construction within NPA. But William H. Harrison, Administrator of the new defense production

(Continued on page 204)

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**... for new or old construction**

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Elevator Doors	Tablets and Signs	Cast Thresholds
Store Fronts	Name Plates	Extruded Thresholds
Lettering	Astragals (adjustable)	MI-CO Parking Meters
Stair Railings	Grilles and Wickets	Museum Trophy Cases
Check Desks (standing and wall)	Wrought and Cast Radiator Grilles	

The MICHAELS ART BRONZE CO., Inc., 234 Scott St., Covington, Ky.

## THE RECORD REPORTS

### WASHINGTON

(Continued from page 202)

agency, takes over from W. Stuart Symington the final authority to certify companies for rapid tax write-off to expand their defense facilities.

- The total of necessity certificates for five-year amortization for tax purposes issued by National Security Resources Board before it gave up this function to the new Defense Production Administration covered contemplated production facilities estimated to cost in excess of \$1 billion. This figure could not be considered a proper guide to 1951 volume, however, since the program is a continuing one. It was understood there were some 900 applications filed for expansion of production facilities with the benefits.

- The National Technical Task Committee on Industrial Wastes met in Cincinnati January 23 and 24. It heard reports on progress in organization for research on the problem of industrial waste disposal. This group was formed last May as the result of a recommendation for Surgeon General Leonard A. Scheele of the Public Health Service by the Water Pollution Control Advisory Board. The chairman is Lyman Cox, supervisor, engineering service division, E. I. DuPont de Nemours and Company, Wilmington, Delaware. During the Cincinnati session the Committee visited the Environmental Health Center of the PHS and heard its work on industrial waste and other water pollution problems explained by the officer in charge, Vernon G. MacKenzie.

### ON THE CALENDAR

Current through Feb. 9: Exhibit of architectural works; Feb. 12-Mar. 9: Exhibit of design and craftsmanship in native industrial art; Mar. 12-Apr. 6: Exhibit of sculpture; Apr. 9-Apr. 27: Exhibit of landscape architecture; Apr. 30-May 25: Exhibit of mural painting — 1951 Gold Medal Exhibition, The Architectural League, 115 E. 40th St., New York City.

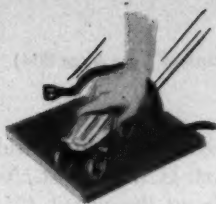
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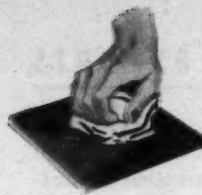
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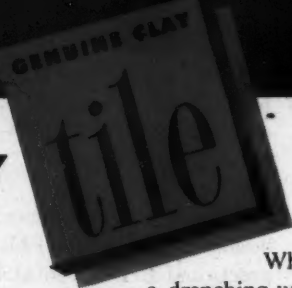


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Tile Council of America, Room 3481, 10 East 40th St., New York 16, N. Y. or Room 433, 727 W. Seventh St., Los Angeles, Calif.

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**THE MODERN STYLE IS CLAY TILE**



## THE RECORD REPORTS

(Continued from page 204)

*Current through Feb. 25:* American Painting Today. Contemporary paintings selected through a nationwide jury competition open to all artists who are permanent residents of this country and carrying \$8500 in prize awards — The Metropolitan Museum of Art, Fifth Ave. at 82nd St., New York City.

*Current through Mar. 25:* Abstract Painting and Art in America, a retro-

spective exhibition — Museum of Modern Art, 11 W. 53rd St., New York City.

*Current throughout 1951:* 1951 Good Design, second in the series of annual exhibitions of well-designed home furnishings, sponsored by the Museum of Modern Art and The Merchandise Mart — The Merchandise Mart, Chicago.

*Feb. 9-10:* Midyear Conference of American Hospital Association — Drake

Hotel, Chicago.

*Feb. 13-14:* Midyear Housing Conference sponsored by Southwest Research Institute's Division of Housing and Construction Technology — Statler Hotel, Washington, D. C.

*Feb. 17-22:* Annual National Convention, National Association of School Administrators — Atlantic City.

*Feb. 28-Mar. 2:* Sixth Annual Technical Session, Society of the Plastics Industry — Edgewater Beach Hotel, Chicago.

*Mar. 5-9:* Spring Meeting and Committee Week, American Society for Testing Materials — Cincinnati.

*Mar. 7-10:* Annual Convention, Michigan Society of Architects — Hotel Statler, Detroit.

*Mar. 16-May 13:* Art Students League Diamond Jubilee Exhibition of Painting and Sculpture — The Metropolitan Museum of Art, Fifth Ave. at 82nd St., New York City.

*Mar. 19-23:* Seventh Western Metal Congress and Exposition — Civic Auditorium, Oakland, Calif.

*Mar. 28:* Postponed opening of exhibition of prize-winning designs from Lamp Competition — Museum of Modern Art, 11 W. 53rd St., New York City.

*Apr. 2-Apr. 30:* Architectural Exhibition — The Art Alliance, 251 S. 18th St., Philadelphia.

*Apr. 24-26:* Annual Meeting, American Wood-Preservers' Association — Stevens Hotel, Chicago.

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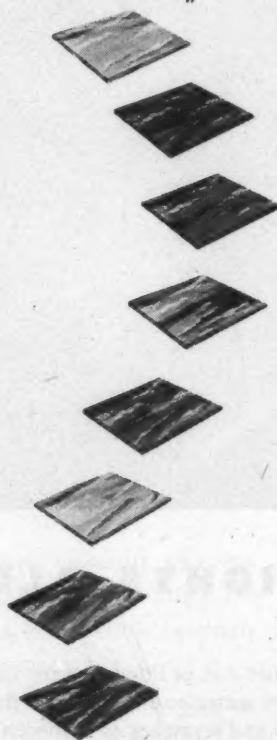
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## OFFICE NOTES

### Office Openings

• Sidney Kalin, Architect, has announced the opening of his offices for the practice of architecture at 2505 W. Cold Spring Lake, Baltimore 15, Md.

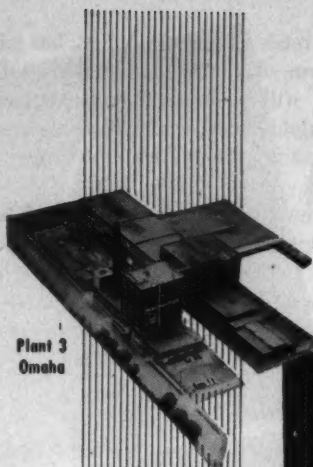
• William Abram Lockard, A.I.A., announces the opening of his office for the practice of architecture at 107 Court St., Decorah, Iowa.

• Miss June Wood Wicker, A.I.A., has opened an office for the practice of architecture at 1420 Peachtree St., N.E., Atlanta, Ga.

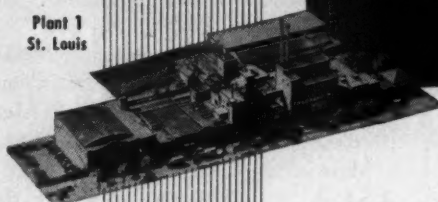
### New Firms, Firm Changes

• Lawrence Grant White and James Kellum Smith announce that Walker O. Cain has become an associate of the

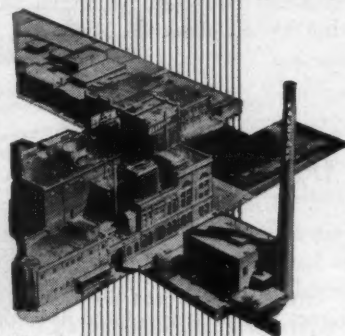
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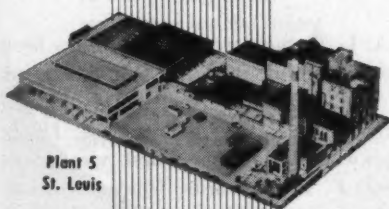
Plant 3  
Omaha



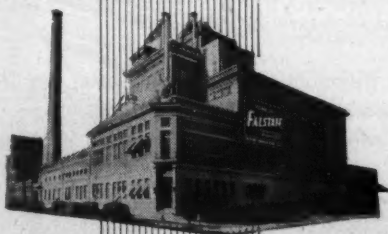
Plant 1  
St. Louis



Plant 2  
St. Louis



Plant 5  
St. Louis



Plant 4  
New Orleans

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In the brewing of Premium Quality Falstaff, Yesterday and Tomorrow meet. At five great plants — in St. Louis, Omaha, and New Orleans — Falstaff Brewing Corporation combines ancient brewing skills with the most modern brewing methods.

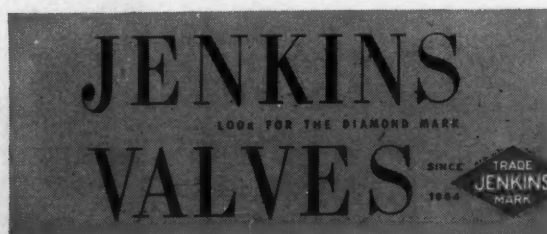
To produce, and maintain, the same "premium quality flavor" in different breweries is no small accomplishment. Falstaff employs not only the latest in scientific knowledge but, for absolute uniformity of product, the most dependable equipment modern engineering can devise. That is why Jenkins Valves are on the pipelines in all five Falstaff plants.

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## THE RECORD REPORTS

(Continued from page 206)

firm of McKim, Mead & White, 101 Park Ave., New York 17, N. Y.

• Donald Qualtrough Faragher, Architect, announces the formation of a partnership with Allen Macomber for the practice of general architecture under the firm name of Faragher & Macomber, Architects. The firm has offices at 900 Powers Bldg., Rochester 14, N. Y.

• Frederick L. Langhorst and Lois Langhorst, Architects, have announced their association with the architectural firm of Don B. Kirby and Thomas Mulvin, San Francisco. Mr. Langhorst is closing his office and will be in Japan for three months working on a site plan for a government installation. Kirby-Mulvin are taking over some of Mr. Langhorst's work during his absence.

• Lawrence Lieberfeld, A.I.A., has joined the firm of Giorgio Cavaglieri, A.I.A., which will be known as Cavaglieri & Lieberfeld, Architects. Offices are at 250 W. 57th St., New York 19, N. Y.

• Payne & Keefe of New London, Conn., announce the association in the firm of Percy L. Allen. The new firm will be known as Payne, Keefe & Allen, Architects and Engineers, with offices at 231 State St., New London, Conn.

### New Addresses

The following new addresses have been announced:

William Pahlmann Associates, Inc., Interior and Industrial Designers, 231 E. 51st St., New York 22, N. Y.

Milford H. Patterson, A.I.A., 221 Pine St., Harrisburg, Pa.

Reisner & Urbahn, Architects, 654 Madison Ave., New York 21, N. Y.

Maurice E. H. Rotival, E.C.P., A.I.A., A.S.P.O., 120 Wall St., New York 5, N. Y.

Abraham Waronoff, Architect, 18700 Prairie Ave., Detroit 21, Mich.

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**MANY THERMOPANE SIZES AVAILABLE** — More standard Thermopane sizes for Pella Casements are available than for any other wood casement windows. Standard size Thermopane is available for the following Pella Ventilating units: 2316, 2418, 25110, 3216, 3319-K, 3319, 34112. Thermopane or Twindow Insulating Glass is also available in standard sizes to fit most Pella picture windows.

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### ELECTIONS APPOINTMENTS

• Two members of the staff of the Chicago Land Clearance Commission have received promotions. James Murphy, architect, has been appointed director of development and Herman Berkman, planning specialist, director of planning. Both officials have been serving in "acting" capacities in their jobs.

• A. L. R. Sanders of Chicago has been elected president of the Illinois section of the American Society of Civil Engineers. Other new officers are: H. F. Peckworth, Batavia — first vice president; F. W. Edwards, Chicago, second vice president; Henry Miller, Chicago, treasurer. Harold F. Sommerschild, Chicago, was elected to a two-year term as secretary in 1949.

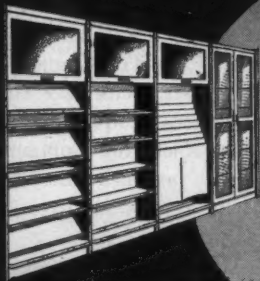
• Raymond F. Kopp has been elected president of Merritt-Chapman & Scott Corporation to succeed Rear Admiral Carl H. Cotter (CEC), USN (Ret.). Mr. Kopp, who has been treasurer since 1938, also will continue in that capacity. Admiral Cotter asked to be relieved of his responsibilities as president and a director to devote the major share of his time to activities connected with the

(Continued on page 210)



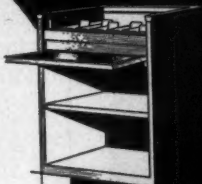
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**Sjöström's Sparkling 1951  
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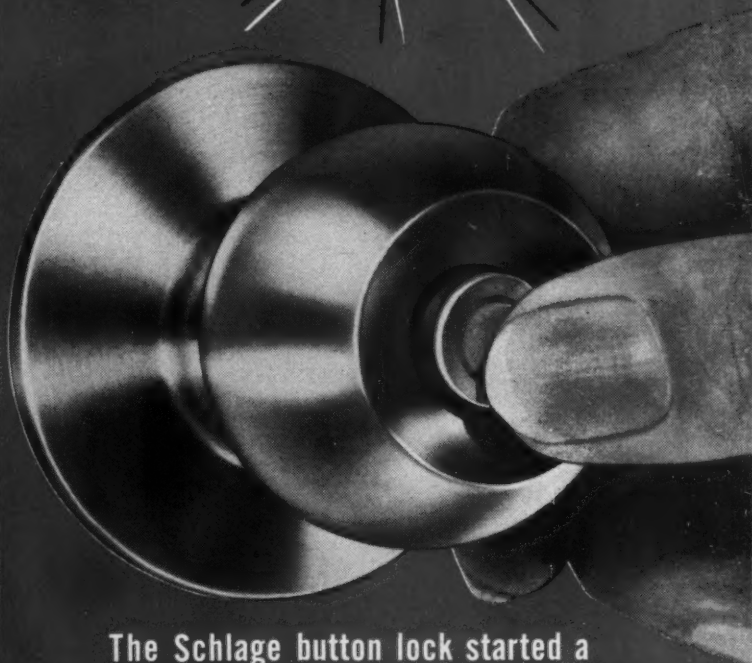
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FEBRUARY 1951

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## THE RECORD REPORTS

(Continued from page 208)

national preparedness program. He will continue his association with Merritt-Chapman & Scott as a consultant.

• Leo M. Bauer of Detroit was elected president of the Michigan Society of Architects at the organization meeting of the Society's Board of Directors in December. He succeeds Alden B. Dow of Midland. Other officers elected were: Ralph W. Hammett, Ann Arbor, first

vice president; Adrian N. Langius, Lansing, second vice president; James A. Spence, Saginaw, third vice president; Peter Vander Laan, Kalamazoo, secretary; and John O. Blair, Detroit, treasurer. Talmadge C. Hughes will serve as executive secretary.

• Alexander Summer of Newark is the 1951 president of the National Association of Real Estate Boards. Newly-

elected officers also include H. Walter Graves of Philadelphia, treasurer, and the following regional vice presidents: Fred B. Mitchell, San Diego; Ben Schlossberg, Jersey City; G. Roscoe Hemstock, Hammond, Ind.; Walter F. Perschbacher, Grand Rapids, Mich.; H. Leonard Paret, Sharon Hill, Pa.; Howard R. Sisson, St. Joseph, Mo.; Ann F. Pardy, New London, N. H.; Leo Mendel, Birmingham; Fred Darnell, Seattle, Wash.; Clarence E. Stauss, New Orleans; Otto Knudsen, Eagle Grove, Ia.; Henry V. Koonts, High Point, N. C.; and Burke C. Payne, Phoenix.

• Ralph M. Kendall has been elected chairman of the Metropolitan New York Codes Committee of the New York State Society of Professional Engineers. He succeeds John Lane, who had resigned.

• Roy W. Schweiker, executive vice president of American Encaustic Tiling Company, Lansdale, Pa., has been elected chairman of the Tile Council of America for 1951. Mr. Schweiker succeeds Drew Schroeder, vice president of Pomona Tile Manufacturing Company of Los Angeles, who becomes a member of the Council's advisory committee.

• Elizabeth W. Wood, formerly assistant to the executive secretary of the New York Chapter of the American Institute of Architects, has been appointed New York manager of the Architects & Engineers Service, now located at 135 E. 40th St., New York, N. Y.

### AT THE COLLEGES

#### Special Lecture Series Opens Hopper Competition at Yale

A special series of lectures by leaders in the fields of hospital planning and administration was scheduled Jan. 30-Feb. 2 at the Yale Department of Architecture.

The lectures were arranged to open the competition for the Magnus T. Hopper Memorial Fellowship in Hospital Architecture for advanced students in the Department. The Fellowship will be awarded next June to the student who has submitted the best plans for a theoretical hospital that will be assigned as a project in the advanced design course.

(Continued on page 212)

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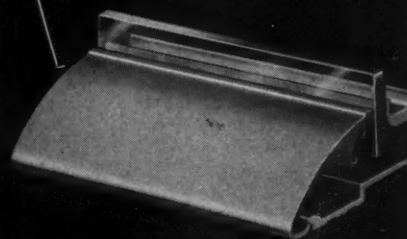
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## THE RECORD REPORTS

(Continued from page 210)

President Ralph T. Walker of the American Institute of Architects was among the five lecturers. Others were Dr. Christopher Parnall, president of the American Association of Hospital Consultants; Dr. Basil C. MacLean, hospital consultant, of Rochester, N. Y.; Basil Yurchenko, architect, of Washington, D. C.; and Charles E. Daniel, consulting engineer, of Baltimore, Md.

Topics on the program of lectures included: The General Philosophy of Hospitalization; The Hospital Plan; The Mechanical Plant; The Architectural Aspects of Hospital Design as They Affect Human Patients; Further Aspects of Design.

Guidance for students competing for the Fellowship will also be given by Architects Richard J. Neutra of Los

Angeles and Edward D. Stone of New York. Both men have received appointments as resident visiting critics in the Yale Department of Architecture. Mr. Neutra will live on the Yale campus during the coming semester.

### Skidmore, Owings and Merrill Found Illinois Scholarship

Their fourth gift in a year of a \$1000 architectural scholarship has been presented by the architectural firm of Skidmore, Owings and Merrill to the University of Illinois.

The scholarship, which the firm intends to make an annual award, is to "recognize, encourage and stimulate excellence in undergraduate studies by students" in the curricula administered by the Department of Architecture.

For the current year, two scholarships of \$500 each will be given for the Spring semester, but thereafter a single scholarship of \$1000 will be granted. Recipients will be selected by a department faculty committee from all students of the department who are about to begin their final undergraduate year. Selection will be on the basis of scholastic attainment and professional promise.

Three other architectural scholarships were established during the year by Skidmore, Owings and Merrill—at Massachusetts Institute of Technology, Cornell University and the University of California.

### Dean Ernest Pickering Heads Design Schools' Association

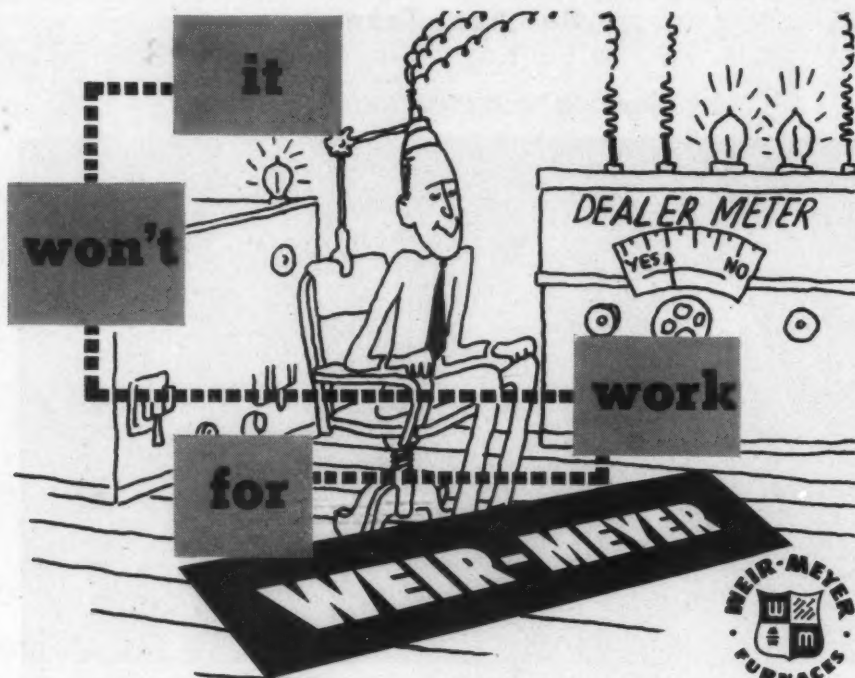
Dean Ernest Pickering of the School of Applied Arts of the University of Cincinnati is the new president of the National Association of Schools of Design.

Also elected to serve for 1951 are: Dean Kenneth E. Hudson, St. Louis School of Fine Arts, Washington University, St. Louis—vice president; Dean Harold R. Rice, Moore Institute of Art, Science & Industry, Philadelphia—secretary; Dean James C. Boudreau, The Art School, Pratt Institute, Brooklyn—treasurer.

Norman L. Rice, director of the College of Fine Arts at Syracuse University, is chairman of admissions, and Philip C. Elliott of the School of Fine Arts at the Albright Art Gallery, Buffalo, is program chairman.

Directors at large are Hubert Ropp, dean of the Art Institute of Chicago; Otto F. Ege, dean of the Cleveland In-

(Continued on page 214)



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## THE RECORD REPORTS

(Continued from page 212)

stitute of Art; and Margaret Glace, dean of Maryland Art Institute, Baltimore.

A special committee on accreditation was named. The committee consists of Dean Pickering, Royal Bailey Farnum and Dana Vaughan.

### Entrance Exams Dropped in Move to Replace Draftees

Cooper Union School of Engineering is admitting advanced standing students

without entrance examinations for the first time in its 91-year history. The step has been taken to speed replacement of students lost because of the present emergency.

Admissions to evening engineering courses for the second semester, which gets under way this month, were accepted from students with at least one year at an accredited school of engineering. It is the first time since the end of

World War II that Cooper Union has permitted any students to enter at midyear.

Cooper Union plans to extend the policy of advanced standing admission without examinations to both day and evening engineering applicants in September.

"Present and proposed policies of Selective Service indicate that we may lose many students in our day and evening classes," says Admissions Officer Prof. Walter S. Watson. "We will fill the places of drafted students with young men and women who formerly were enrolled at any accredited school of engineering."

### Britain's First Full Course In Landscape Design Opened

A course leading to a diploma in landscape design has been instituted by the University of Durham at King's College, Newcastle-upon-Tyne, England. It is the first full time course in landscape design in Britain.

The course is conducted in the Department of Town and Country Planning as a postgraduate course. It is open to candidates with approved university or professional qualifications in town and country planning, architecture, horticulture or forestry.

The initiation of this course follows the establishment of a full time lectureship in landscape architecture in the Department of Town and Country Planning in 1948. That was the first full time lectureship in the subject to be established in Britain.

### Faculty Appointments

• Dr. Jaroslav J. Polivka, consulting engineer in this country since 1938, has been appointed a lecturer in architecture at Stanford University. Doctor Polivka, who has collaborated with Frank Lloyd Wright in designing the proposed low-level bridge crossing of San Francisco Bay and the proposed Guggenheim Gallery in New York City, was a research associate in civil engineering at the University of California during the years 1938 to 1944.

• Paul Schweikher, Architect, of Roselle, Ill., is currently a visiting critic in the Department of Architecture at Yale University.

(Continued on page 216)

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CORROSION  
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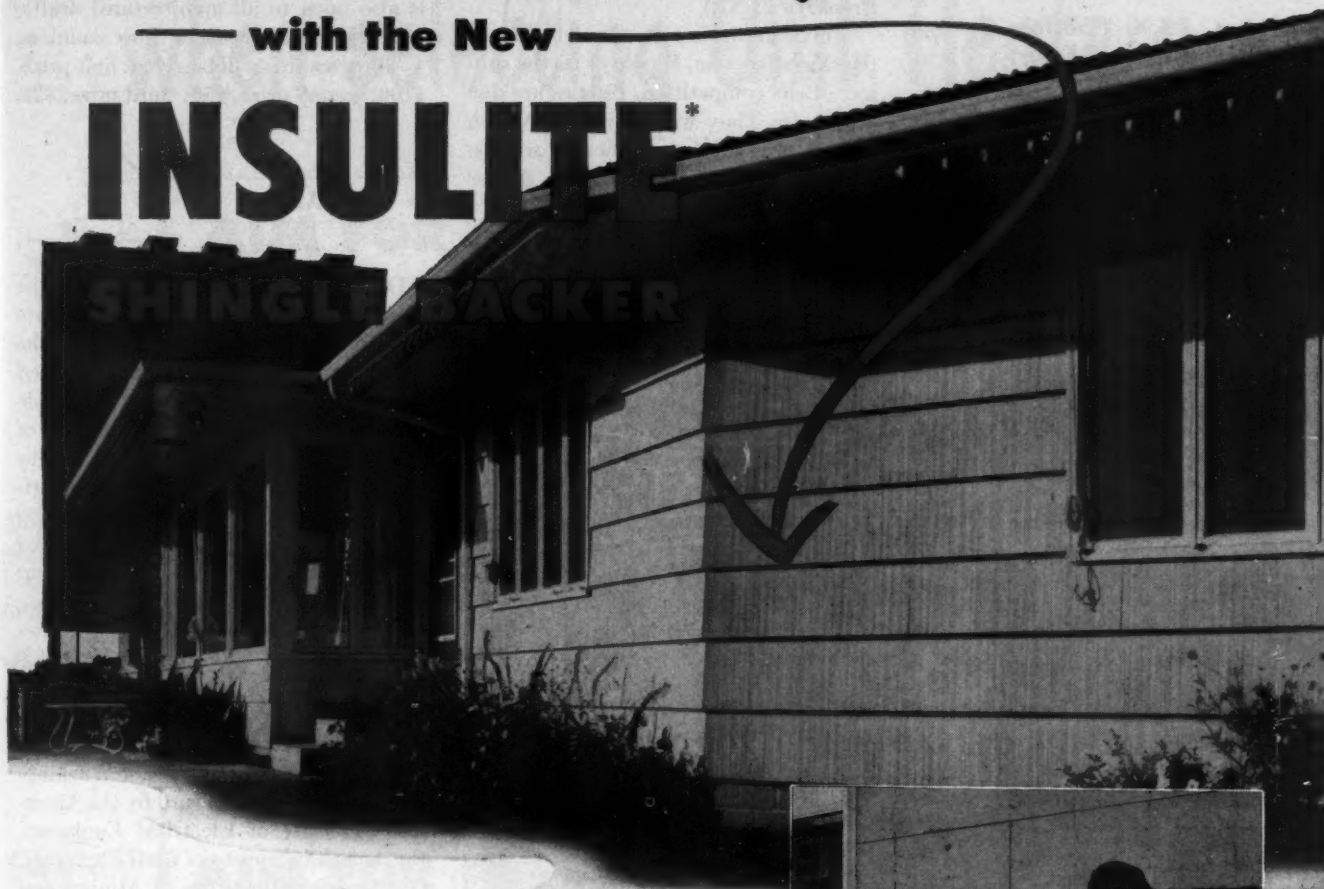
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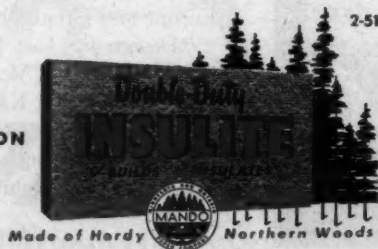


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FEBRUARY 1951

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## THE RECORD REPORTS

(Continued from page 214)

### COMPETITIONS

#### Brooklyn A.I.A. Chapter Announces Annual Event

Registration will continue until March 1 for the annual architectural competition sponsored by the Brooklyn Chapter of the American Institute of Architects. Prospective competitors should send their names and addresses to Vito P.

Battista, chairman of the education and registration committee, 26 Court St., Brooklyn 2, N. Y.

A civic group in a local neighborhood (Bushwick section, Brooklyn) is the subject of the competition. Entries are due March 16. They will be judged March 22 and presentation of awards will be made at the regular monthly dinner meeting of the Chapter March 27.

The competition is open to all archi-

tectural students who attend any school in Kings, Queens, Nassau and Suffolk counties, or whose official residence is in those counties and who attend any architectural school in the United States. It is also open to all architectural draftsmen who live or work in those counties.

Three awards will be given: first prize, \$100; second prize, \$50; third prize, \$25.

### AWARDS

• Dr. Karl T. Compton, chairman of the Corporation of Massachusetts Institute of Technology, has been awarded the 1950 Hoover Medal for "distinguished public service." The award is made jointly by the American Institute of Electrical Engineers, American Society of Mechanical Engineers and the American Society of Mining and Metallurgical Engineers. Doctor Compton was cited as "a great leader in engineering education, who has had a profound influence on the development of science and engineering. . . ."

• The John Fritz Medal has been bestowed on Dr. Vannevar Bush, president of the Carnegie Institution of Washington, D. C., in a joint award by the American Institute of Electrical Engineers, the American Society of Civil Engineers, the American Institute of Mining and Metallurgical Engineers and the American Society of Mechanical Engineers.

• Architect Bernard R. Maybeck has received the award for 1950 of the Building Industry Conference Board of San Francisco. Mr. Maybeck has been selected to receive the 1951 Gold Medal of the American Institute of Architects.

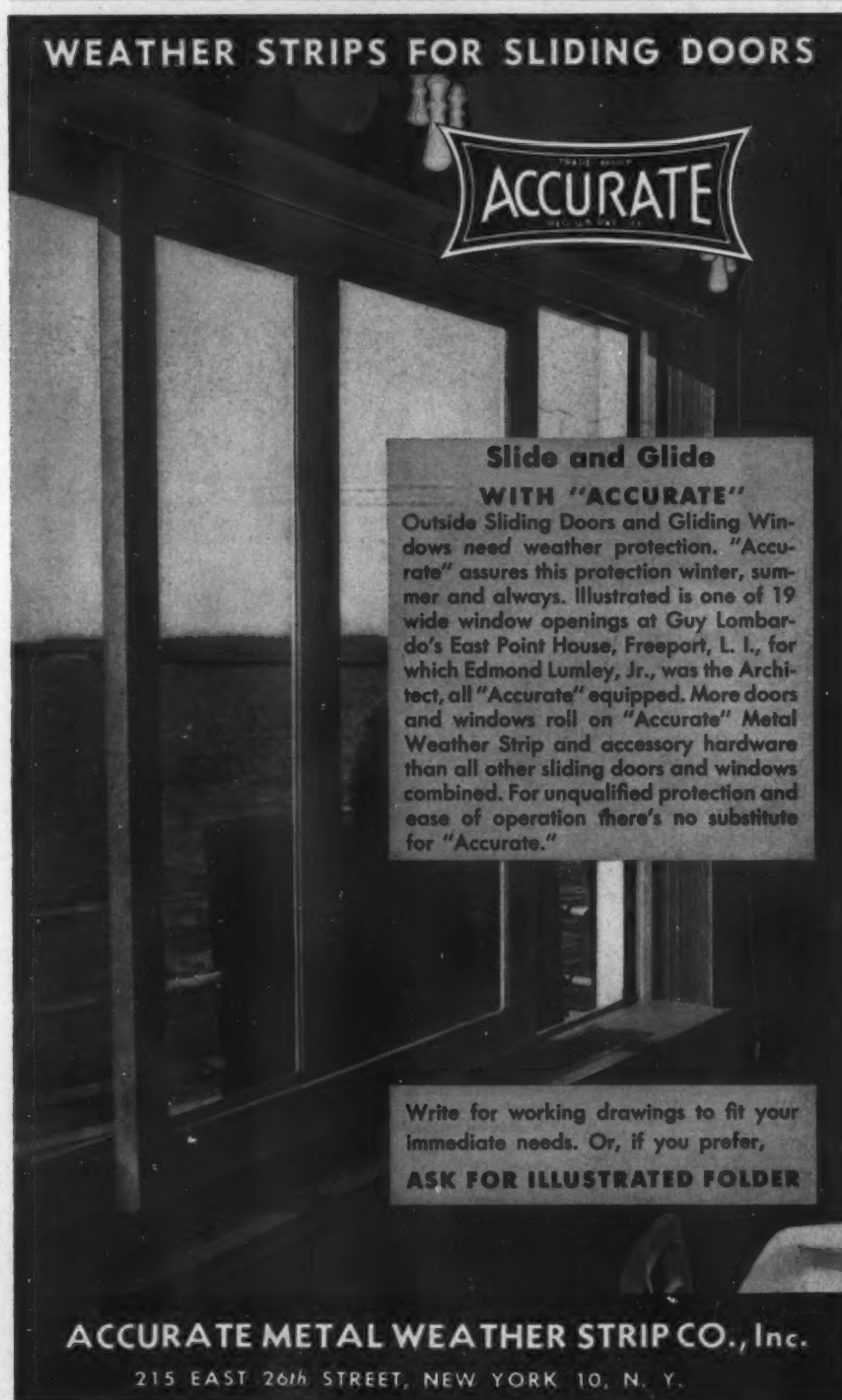
### EXHIBITIONS

#### "Design for Use, U.S.A." Begins Its European Tour

The first large exhibition of American-made home furnishings to be sent abroad is now touring the principal cities of Europe and Great Britain.

"Design for Use, U.S.A.," prepared by the Museum of Modern Art under the direction of Edgar Kaufman Jr., is being shown against a background, suitable for shipment, prepared by Alexander Girard, Detroit architect.

(Continued on page 218)



**WEATHER STRIPS FOR SLIDING DOORS**

**Slide and Glide WITH "ACCURATE"**

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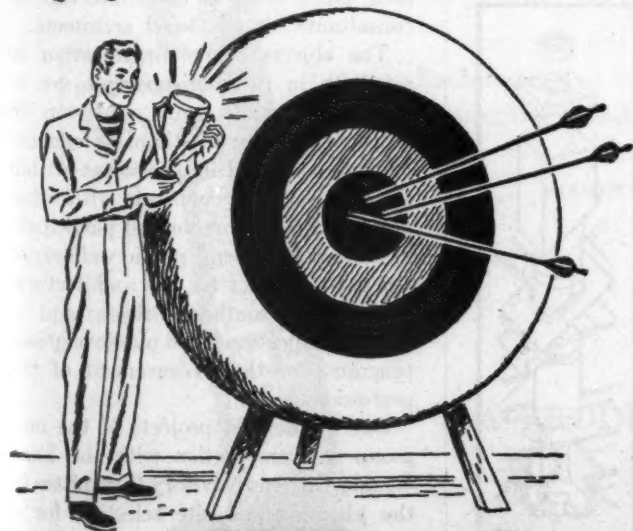
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## THE RECORD REPORTS

(Continued from page 216)

The exhibition, comprising more than 500 items, was inspired by demand from museums in Europe for a display to illustrate what is being done in the field in this country.

Commenting on the exhibition, Mr. Kaufman notes that demand for it is another manifestation of a growing European awareness of American design in the home furnishings field: "Now we are beginning to be accepted by Europeans

as design originators; they recognize American progressive design in its own right in addition to their interest in the purely commercial side of the United States market."

### African Sculpture Shown In Segy Gallery Exhibit

Now on view at the Segy Gallery, 708 Lexington Avenue, New York City, is

the first exhibition of masterpieces of African art compiled entirely from American private collections.

Dr. Paul S. Wingert, assistant professor of art at Columbia University, in his foreword to the exhibition catalogue has stated: "The aesthetic qualities of African art are purely sculptural. Whether he was working in wood or metal, the Negro artist gave his forms an existence in space so complete that as one moves around the small objects, every changing silhouette adds to one's comprehension of the form. Only from all of the silhouettes can the truly three-dimensional conception of the artist be fully understood. . . ."

The exhibition will be shown through February 15.

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### NEW ARCHITECTS' GROUP IS ORGANIZED IN OREGON AREA

The Oregon Society of Architects, a nonprofit, unincorporated organization, has been founded in Lane County, Oregon.

Charles W. Endicott of Eugene, Ore., was elected as the first president. Other officers, all of Eugene, are: Sydney W. Little, dean of the School of Architecture at the University of Oregon, vice president; Frederick T. Hannaford, secretary-treasurer; Clare K. Hamlin and John L. Reynolds, directors.

Members are registered architects; associate members are non-registered men, either teachers of architecture or consultants for registered architects.

The objects of the organization as set forth in its announcement are to unite the architectural profession in southern Oregon; to stimulate and encourage continual improvement within the profession; to cooperate with other professions; to promote and participate in matters of general public welfare; to represent and act for the architectural profession in southern Oregon; and to promote educational and public relations programs for the advancement of the profession.

One of the first projects of the new group was cooperation with the Lane County Citizens Advisory Committee in the planning and site selection for a contemplated city-county-state administrative center. Other committees are studying problems of county and city

(Continued on page 220)

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## THE RECORD REPORTS

(Continued from page 218)

planning and zoning, low-cost housing and the field of public relations.

### 1951 BUILDING RESEARCH CONGRESS IS SCHEDULED

Progress in research in relation to architecture, building and the associated branches of civil engineering will be re-

viewed at a comprehensive Congress on building research scheduled in London next September 11-20.

Architects and engineers from all over the world are expected to be among the leaders in the construction field who will attend. The organizing secretary has invited queries for applications from any individuals who wish to attend as well as

from organizations who may wish to send delegates.

Six days of technical sessions have been planned in three divisions holding concurrent meetings.

Division 1, which is concerned with the engineering and structural aspects of building, will cover the influence of mechanization and prefabrication on techniques and cost of building; the influence of modern research on structural design; and the influence of modern soil studies on the design and construction of foundations.

Division 2, which is concerned with building materials, will cover individual materials such as burnt clay products, cement and concrete, building stones, lime, paints, plaster and timber, and there will be in addition a wide survey of research on weathering and durability of building materials.

Division 3 will be concerned generally with the various factors which influence the comfort and efficiency of the people using the buildings. Among the topics will be acoustics of auditoria and broadcasting studios; heating and ventilating of buildings in relation to summer and winter conditions; the lighting of buildings. In addition, three specific types of buildings — hospitals, factories and schools — will be considered in the light of all the requirements they must meet if they are to fulfill their purpose.

Several Americans are listed by the provisional program as participants. These include C. O. Christenson, Prof. G. Winter, Prof. K. Terzaghi, D. E. Parsons, H. E. Snoke, R. F. Blanks, H. F. Gonnerman, Dr. L. L. Beranek, Prof. C. O. Mackey, Prof. F. W. Hutchinson, R. L. Biese, F. Birren, the staff of Albert Kahn Associated Architects & Engineers Inc., and Lawrence B. Perkins.

The Congress, which will have headquarters at the Institution of Civil Engineers, will take place during the period of the 1951 Festival of Britain and visitors at the Congress will be able to see the Festival exhibitions.

Participating bodies include the Royal Institute of British Architects, the Institution of Civil Engineers, the Institution of Structural Engineers, the Institution of Heating and Ventilating Engineers and the Illuminating Engineering Society as well as 13 other groups.

Queries should be addressed to: The Organising Secretary, Building Research Congress 1951, Building Research Station, Watford, Herts, England.

(Continued on page 222)



## HERE'S AID TO ARCHITECTS and ENGINEERS in planning SOUND SYSTEMS!

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page 222)

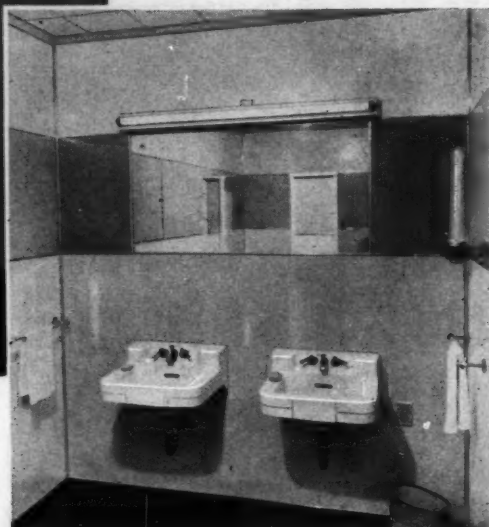


In the home, Marlite baths and kitchens are the thrifty answer to easier housekeeping and walltime beauty. In any non-residential installation, Marlite means minimum maintenance for attractive, spotless cleanliness.

## Eliminate Painting . . . Cut Costly Maintenance with time-tested *Marlite* walls

Offer your clients *real* savings by specifying durable, easy-to-install bathrooms and other interiors of Marlite plastic-finished wall and ceiling panels. No matter what type of project, on old walls or new, Marlite's sparkling surface offers lasting beauty without costly maintenance. Marlite never requires painting or redecorating . . . cleans as swiftly as the finish on the finest refrigerator. Dirt, stains and moisture are sealed *out*; the bright colors are sealed *in*!

Select from 64 striking color and pattern combinations to suit any decorative theme. See our catalog in Sweet's File, Architectural, which also shows new Marsh Color-Matched Aluminum Mouldings to blend perfectly, or contrast, with any Marlite interior. Use coupon for free folder.



WRITE FOR FREE FULL-COLOR FOLDERS

for creating  
beautiful  
interiors



MARSH WALL PRODUCTS, INC., Dept. 205, Dover, Ohio  
Subsidiary of Masonite Corporation

Please send free full-color literature showing Marlite installations in homes and institutions.

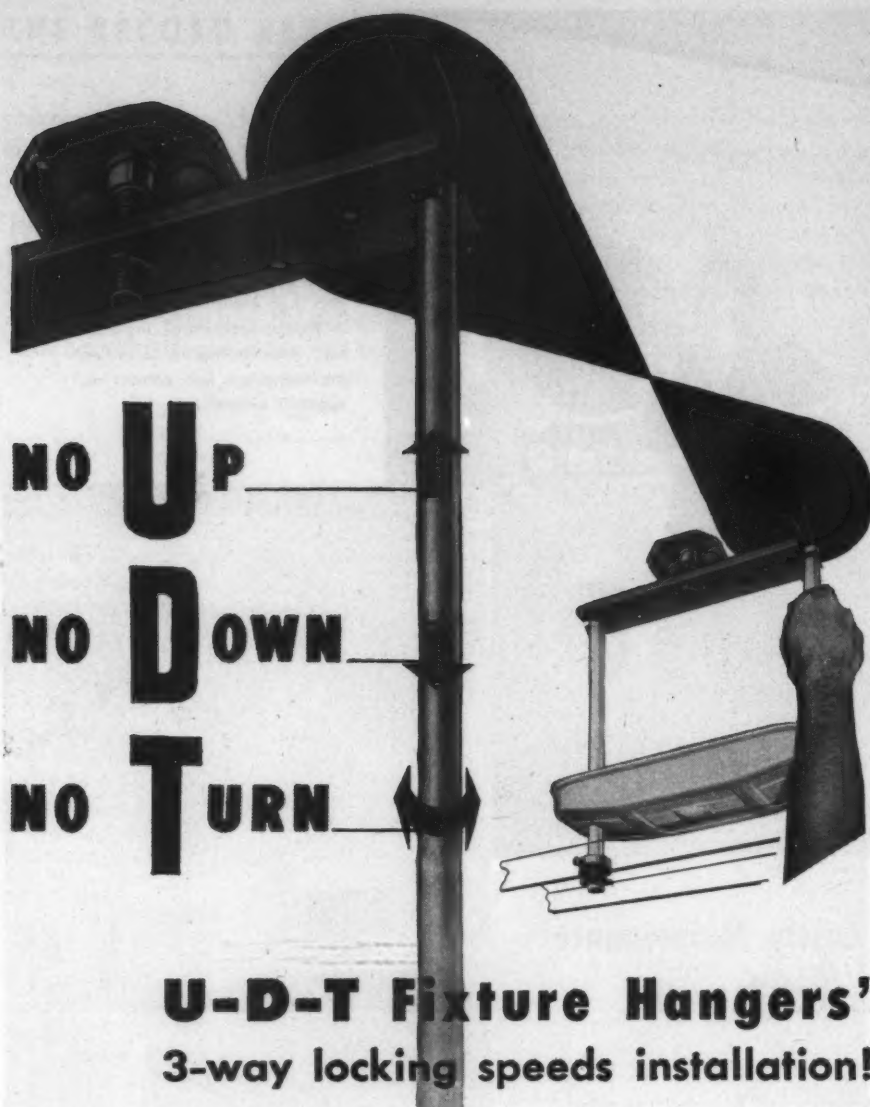
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## U-D-T Fixture Hangers' 3-way locking speeds installation!

Helpful as another pair of arms, these solid-gripping GUTH U-D-T Hangers allow one man to hang fixtures quickly and securely:

- 1** Ceiling bridge is attached to ceiling or outlet box.
- 2** Stems are locked into fixtures and canopy slipped on stems.
- 3** Stems are hooked onto ceiling bridge and canopy fastened to bridge. Fixtures are leveled quickly with handy set screws atop their channels.

**Guth**

**LIGHTING**

THE EDWIN F. GUTH COMPANY / ST. LOUIS 3, MISSOURI

*Leaders in Lighting since 1902*

### GUTH

NEW LOW-PRICED U-D-T Hangers are available for both single and double stem attachments. See the U-D-T at your GUTH distributor today — or write for Bulletin 873-J.

## THE RECORD REPORTS

(Continued from page 220)

### A.I.A.-P.C. Competition Entries Are Due Mar. 15

There is still time for architects to nominate manufacturers' literature for the 1951 Building Products Literature Competition. Nominations will be accepted till March 15.

Awards will be made on the basis of three classifications:

1. Literature concerned primarily with basic technical information (handbooks, manuals, or any material offering general information on design, specifications, methods of application, where emphasis is upon the problem, rather than on the merits of a particular product).

2. Literature confined to the particular products of a single manufacturer (catalogs, catalog manuals, etc.).

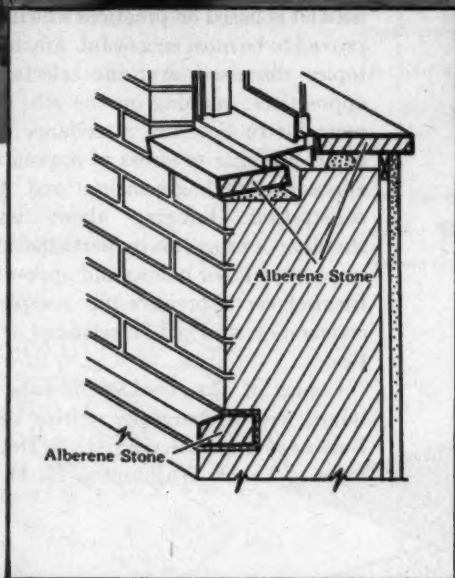
3. Literature of a primarily promotional nature (reminders, announcements, testimonials, etc.).

Certificates of merit will be awarded in each class. Certificates of exceptional merit may be awarded, at the discretion of the Jury of Awards. Awards will be announced and presented during the annual convention of the American Institute of Architects in May.

Architects may nominate one or more pieces for the competition by letter reference addressed to: Department of Education and Research, The American Institute of Architects, 1741 N. Y. Ave., N. W., Washington 6, D. C.

Manufacturers or their agencies may enter one or more pieces of their own literature by sending three samples of each entry addressed to the Technical Director, The Producers' Council Inc., 1001 15th St. N. W., Washington 5, D. C. A fee of ten dollars should accompany the entry or entries of each manufacturer or organization.

(News continued on page 224)



Detail showing 1½" thick slip sill with 1¼" stool and 2¼" belt course.

Tripler General Hospital, U. S. Army Medical Dept., Hawaii  
— Architects: York and Sawyer, New York City. 1½"  
Alberene slip sills.

## sills, stools, and trim of **ALBERENE** stone are **DURABLE and ECONOMICAL**

Regular Grade Alberene Stone is an ideal material for exterior trim because it can be cut into thin sections, permitting substantial economies. It offers freedom to the designer—by making possible greater reveal, to give just one example.

The stone has no cleavage planes, is dense, non-absorbent, and chemically-resistant. It is free of maintenance cost. Its color—silver gray in rubbed finish and a pleasing blue gray when honed—harmonizes well with almost any color scheme.

Where a darker color is desired, we suggest

Alberene Serpentine. It is a darker gray in rubbed finish, black when honed, and black with a slight greenish cast when polished.

The high chemical resistance of both stones, which has made them favorites for use in laboratory equipment, also makes them ideal for window stools in laboratory buildings.

Since there is a decided difference in price between Alberene *Regular Grade* and *Serpentine*, architects' specifications should be carefully worded so as to clearly call for the type desired. Ample supplies of both materials are available.

## ALBERENE STONE CORPORATION

419 Fourth Avenue, New York 16, N. Y.

Branches in Principal Cities



## THE RECORD REPORTS

(Continued from page 222)

### POST-KOREA SPURT PUTS 1950 MARRIAGES OVER '49

A five per cent rise over 1949 in marriages during 1950 reflects a spurt in weddings following the outbreak of hostilities in Korea, Metropolitan Life Insurance Company statisticians report.

The marriage rate in the first six months of last year averaged five per

cent below that for the corresponding period of the year before; but July and every month thereafter recorded more marriages than the comparable month of 1949.

The 1950 increase, based on nearly 1,675,000 marriages, reverses the trend of the three preceding years. But Metropolitan's statisticians point to the 1950 marriage rate of 11.0 per 1000 of popu-

lation as the fourth lowest since 1939. "The outlook," says their report, "is that the rate in the near future will fall to one of the lowest levels in our history."

### BOOKLET GIVES ADVICE ON APPRENTICESHIP PROBLEMS

The various duties of the joint management-labor apprenticeship committee in conducting programs of apprentice training in the building trades are explained in detail in an 18-page booklet entitled "JAC—Key to Successful Apprenticeship in the Construction Industry."

The booklet is issued by the U. S. Labor Department's Bureau of Apprenticeship for the guidance of Committee members.

The information contained in the booklet is based on practices which have proved to be most successful. Among the topics discussed are: the selection of apprentices; training on the job; classroom instruction and attendance; tests in determining progress of apprentices; apprenticeship agreements and their registration; bringing about understanding of programs by participation of employers, labor unions and apprentices themselves; apprenticeship completion ceremonies; and public relations activities.

Copies of this booklet may be obtained free of charge by writing to the Bureau of Apprenticeship, U. S. Department of Labor, Washington 25, D. C.

*for roof or floor*  
**fills**  
*lightweight...insulating*

Use concrete made with Waylite aggregate for roof or floor fills. Reduces deadweight. Has high thermal insulation and sound-deadening values. Incombustible. Easily placed, especially around pipes and conduits.

Waylite is a lightweight air-cell aggregate made by processing molten blast furnace slag. It is a uniform material that comes properly graded. Recommendations for its use are supported by a wealth of technical data and by widespread, successful use on various types of structures. Approved by Board of Standards and Appeals, New York City.

In addition to fills, Waylite aggregate makes lightweight structural concrete that saves as much as 35% deadweight and can be designed up to 4000 psi. See Sweet's for engineering data. For further information and quotations, address the Waylite Co., 105 W. Madison St., Chicago 2, or Box 30, Bethlehem, Pa.

for  
lightweight  
concrete

**WAYLITE**  
AGGREGATE

### FORREST R. HUGHES, YALE ENGINEERING PROFESSOR

Forrest R. Hughes, 57, associate professor and assistant dean of the Yale University School of Engineering, died January 5 at his home in New Haven after a long illness.

Mr. Hughes had been at Yale since 1926, when he was appointed an instructor in engineering drawing. He was advanced to the rank of assistant professor of engineering drawing in 1931 and later was appointed lecturer in civil engineering. He had been assistant dean of the School of Engineering for more than two years.

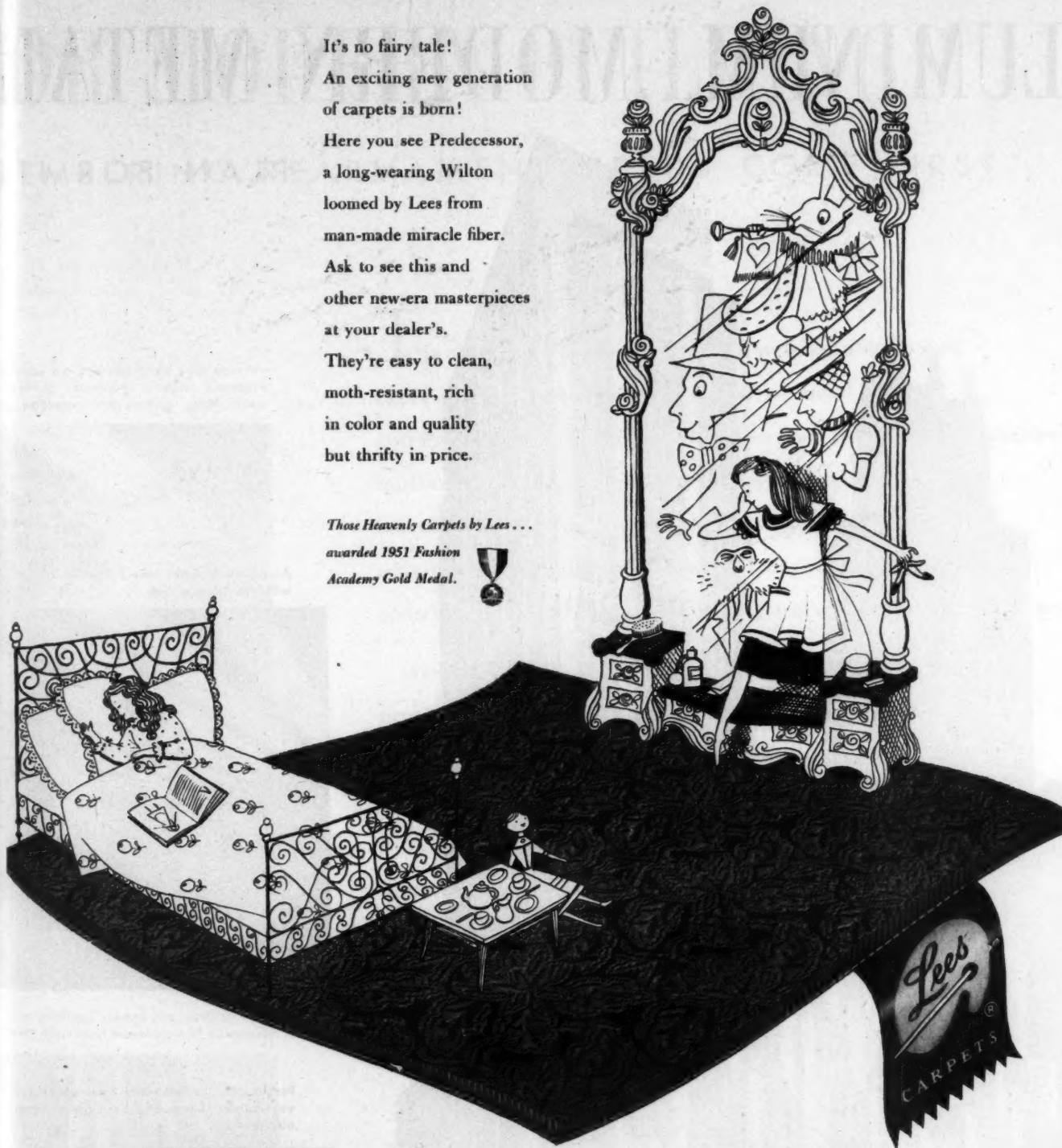
During World War II Mr. Hughes supervised the training of more than 15,000 defense workers under Yale's Engineering, Science and Management War Training Program.

... those heavenly carpets by **LEES**

It's no fairy tale!  
An exciting new generation  
of carpets is born!  
Here you see Predecessor,  
a long-wearing Wilton  
loomed by Lees from  
man-made miracle fiber.  
Ask to see this and  
other new-era masterpieces  
at your dealer's.  
They're easy to clean,  
moth-resistant, rich  
in color and quality  
but thrifty in price.

*Those Heavenly Carpets by Lees...*

awarded 1951 Fashion  
Academy Gold Medal.



JAMES LEES AND SONS COMPANY BRIDGEPORT, PA., MAKERS OF LEES CARPETS AND RUGS COLUMBIA AND MINERVA HAND-KNITTING YARNS



# ALUMINUM...MODERN METAL FOR

... PLAN FOR ITS UMEMB

Elevator cabs by O  
clean striated alu  
strength, lightness

Aluminum troughs reflect light in lobby ceiling, blending with the bronze trim.



Aluminum mullions  
blend with alumin

Permanent, maintenance-free aluminum louver ventilation, keep hot sun away from air-conditioning equipment.



100 Park Avenue. Kahn & Jacobs, Architects.  
George A. Fuller Co., General Contractors.  
Alcoa Aluminum used for windows, spandrels,  
and mullions fabricated by General Bronze  
Corporation.

# AL FOR MODERN BUILDINGS

ITS REMEMBERING REARMAMENT NEEDS COME FIRST

Elevator cabs by Otis are lined with easy-to-clean striated aluminum panels. Combine strength, lightness and lasting good looks.



Aluminum mullions accent the vertical lines, blend with aluminum windows and spandrels.



The clean, efficient lines of today's architecture are well expressed in aluminum . . . the modern metal. In 100 Park Avenue, aluminum has been used for windows, spandrels, mullions, copings, louvers, and lobby ceiling. In each case, one or more of aluminum's qualities of lightness, economy, workability and freedom from corrosion have contributed to the building's efficiency and economy of maintenance.

As in this building, Alcoa Aluminum has been used in nearly every major office building erected in America in recent years. Alcoa engineering and production men are eager to co-operate with forward-looking designers and builders. For information on any application of aluminum, call your nearby Alcoa Sales Office or write, ALUMINUM COMPANY OF AMERICA, 1888B Gulf Building, Pittsburgh 19, Pennsylvania.

# ALCOA

FIRST IN



ALUMINUM



## THE RECORD REPORTS

that "these are unprecedented figures for this season of the year."

Greatest advance over last year was shown in the commercial category, which also includes public buildings. Both commercial and residential construction showed gains in all regions of the country, with commercial construction registering particularly striking

### CANADA (Continued from page 16)

progress in the Maritime Provinces.

Industrial and engineering construction, on the other hand, failed to maintain the pace set last year in the West and engineering declined slightly in Ontario. Explanation for the drop in engineering in the West is that the oil pipeline to the lakehead was begun at this time last year.

### Stop Sale of Steel for New Amusement Buildings

Trade Minister Howe has cut off the sale of steel for new amusement buildings.

How much steel this will save is anybody's guess. The important point: is this the first of a series of curbs on non-defense construction?

An outright ban on certain classifications seems unlikely at this time, and it is doubtful if existing legislation empowers the government to make such a move.

However, the same result can be achieved under a system of directives and priorities. Production and distribution of materials classified as essential can be arranged pretty well as the government desires.

## rugged roofing for el rancho . . . . .



Above and below. Residence: J. W. Runyon, Dallas, Tex. Architect: Chas. S. Dilbeck



**OUT ON THE PLAINS** of Texas and in the great Southwest, the people know the kind of roof that serves them well and has done so since long before the Alamo . . . Tile. Tile is on the missions, the cathedrals, the haciendas, and Ludowici shale tile in its many authentic styles and colors can serve you and your clients, too, because this is a roof that *does* serve anywhere. Almost imperishable, it is definitely economical. Architecturally correct, it is beautiful, and for any type of building a tile roof is wholly dependable with a minimum of installation and maintenance cost.

Inquire about Ludowici roofing tiles. We shall be glad to show you samples and send full information upon request. See our catalog in Sweet's.



New York 17, New York  
305 Fifth Avenue  
Washington 1, D. C.  
749 15th Street, N. W.

**LUDOWICI-CELADON CO.**  
104 S. Michigan Avenue, Chicago 3, Illinois

Cleveland 26, Ohio  
12734 Woodland Avenue

### Establish Policy for Getting Architects for Defense Work

Possible curtailment of construction unrelated to defense is turning the attention of Canadian architects and engineers to opportunities in defense construction.

The works and buildings directorates of the armed services are bogged down by the accelerated defense program. For expediency's sake, a policy of letting out design work to architects and engineers in private practice has been adopted.

How do they go about getting these commissions?

First, they volunteer their services, submitting references and qualifications to the new crown company, Defense Construction Limited. R. G. Johnson is president and general manager, with headquarters in Ottawa.

If a project is planned in their region, and if, after checking with the armed service concerned, D.C.L. is satisfied they are thoroughly competent, it is likely they'll be given the job.

As a rule, design talent is all that is wanted. Defense Construction lets the contract itself, and in most cases makes arrangements for supervision either through the armed services or Central Mortgage & Housing Corp.

### Housing Starts Total 61,700 In First Eight Months of '50

In the first eight months of 1950, construction began on 61,700 dwelling  
(Continued on page 230)





**SCHOOL BOARD SUPERINTENDENT**

How to build the schools we need on our budget?



**SCHOOL PRINCIPAL**  
How to handle an increasing enrollment without additional space?



**SCHOOL ARCHITECT**

What features to incorporate that will make the building completely efficient?

## Multiple-Use-of-Space Answers All Three Problems

With *In-wall* equipment an activities room can be converted to a lunchroom for 200 in eight minutes. Lunchroom space and table and chair storage space are eliminated. Now in satisfactory use from coast to coast.

WRITE FOR CATALOG



*In-wall*  
**FOLDING TABLES  
AND BENCHES**

ALREADY SPECIFIED BY 85% OF ALL  
LEADING SCHOOL ARCHITECTS IN NEW  
BUILDING AND REMODELING PROJECTS.

SCHIEBER MANUFACTURING CO.  
12728 Burt Road, Detroit 23, Michigan

Booth No. L-4, NEA-AASA,  
Atlantic City, Feb. 17-22, 1951



## THE RECORD REPORTS

CANADA (Continued from page 228)

units, compared with 57,827 during the same period last year.

August 1950 starts of 9306 were nine per cent over August 1949, but completions were four per cent under. Units under construction totaled 67,616, up 15 per cent from the August 1949 figure.

The Maritime Provinces showed the only significant change in average time under construction. A new residential

unit completed there in August took 4.3 months to build, a record low for the region. The national average for the month was 6.6 months against 6.9 months in August 1949.

### Additional Office Space Is Needed in Many Cities

Additional office space is badly needed in principal Canadian cities. In Toronto,

Edmonton and Vancouver first class accommodation is 100 per cent taken up, with very little second class space on the market.

Montreal has some better class space still available, but vacancies are rapidly being filled.

In the event of increased demand by the federal government for its defense and control agencies in these centers, the situation could become highly critical. Present tenants would have to be displaced, or new construction undertaken.

Rather than the government owning the quarters it occupies, trend has been for it to give long-term leases to big real estate operators who then use the leases as security to get 100 per cent financing to erect new buildings or convert old ones.

### Fire Protection Subject as Architects, Engineers Meet

Members of the Province of Quebec Association of Architects and the Montreal branch of the Engineering Institute of Canada recently held a joint meeting. Speaker was E. C. Duff, Quebec manager of the Canadian Underwriters' Association.

Nobody, stated Mr. Duff, could exert a greater influence in the field of fire protection than the architect and the consulting engineer. Proper fire protection commences at the architect's drafting board, he said, and emphasized that this did not apply to new buildings or extensions alone, but also to modernization of old buildings.

"Nothing is fireproof," he declared. Reinforced concrete and protected steel frame buildings are often referred to as "fireproof," but "there have been many such buildings so severely damaged by fire that the term 'fireproof' has been discontinued in publications of the National Fire Protection Association."

### Plan 200-Unit Housing Project In Little Mountain, Vancouver

Latest venture to be launched under the three-way mutual assistance clause of the revised National Housing Act is a 200-unit low-rental project for Little Mountain, Vancouver.

Cost of it is to be borne 75 per cent by the federal government and 25 per cent by the province. The municipality may be called upon to pay part of the province's share.

(Continued on page 232)



ARCHITECT: GORDON  
DRAKE OF CARMEL AND  
SAN FRANCISCO

*A Variety of  
New and Lasting  
Effects for*

## EXTERIOR REDWOOD



ARCHITECT: HARWELL  
HAMILTON HARRIS,  
LOS ANGELES

CABOT'S 325 CALIFORNIA  
REDWOOD STAIN

— same color as Cabot's California Redwood Stain but with heavier pigmentation and greater hiding power.

CABOT'S 3655 NEGROIA  
RED STAIN

— imparts a delicate greenish grey color to the wood.

CABOT'S 357 EUCALYPTUS  
GREY CREOSOTE STAIN

— specially blended pigments blended in Creosote oil capture and preserve the natural color of new Redwood.

CABOT'S 241 CREOSOTE  
WEATHERING OIL

— turns wood to weatherbeaten driftwood grey, which develops gradually over 6 months' exposure.

CABOT'S 400 CLEAR  
WATER FINISH

— a transparent waterproof finish producing a lustrous gloss... particularly designed for Redwood.

WRITE TODAY FOR

folder "Redwood Staining," and color card showing Cabot's finishes for Redwood.

# Samuel Cabot, Inc.

229 OLIVER BLDG., BOSTON 9, MASS.



DARTFORD MOTOR COURT, Green Lake, Wisconsin.  
Architects: Auler, Irion & Wertsch, Inc., Oshkosh, Wisconsin.



## "Thrifty Third" NORTHERN HARD MAPLE for low-cost floors of character and beauty

Wherever cost is a first consideration . . . in motor court, residence or large-scale housing project . . . the "economy grades" of Northern Hard Maple offer recognized advantages. Durability and ease-of-maintenance you take for granted. But here's real beauty, too! The interesting blendings of varying warmer tones are a unique and highly attractive characteristic of "Thrifty Third" and Second Grade Maple and Birch!

Says Mr. Theodore Irion, architect for the Dartford Motor Court: "I like Maple floors for any type of building . . . for hard service in a motor court no floor could be more practical and attractive. Third Grade Maple, in my opinion, is beautiful and characterful when properly laid and finished . . . the delicate grain formation and deep colorations seem just right for these floors."

When MFMA Second and Third Grades are specified there is important economy *at no sacrifice of intrinsic quality*. Thus the money savings are real and enduring. For maximum thrift, and even subtler shade blendings, the narrower, tighter-laying 1½" face is now available.

### SEE SWEET'S...

Architects' 13g-7; Engineers' 4i-21  
for full data and standard specifications, both strip and patterned designs.

### MAPLE FLOORING MANUFACTURERS ASSOCIATION

Suite 563, Pure Oil Building  
35 East Wacker Drive

CHICAGO 1, ILL.

FLOOR WITH **NORTHERN** HARD MAPLE  
BEECH AND BIRCH





Living room at Monroe Park Apartments showing Webster Baseboard Heating.

## "It's Webster Baseboard Heating Again"

The fifth and largest garden apartment project built by Housing Engineering Co., Baltimore, is also their fifth and largest installation of Webster Baseboard Heating — true perimeter forced hot water heating.

Monroe Park, near Wilmington, Del., offers luxury living at moderate cost to 606 families. Other projects by the same owners include River Point, Norfolk, Va., 220 units; Silver Hills, Silver Hills, Md., 216 units; Penn Manor, Pennsauken, N. J., 308 units; River Drive, Newport News, Va., 208 units—and they all feature Webster Baseboard Heating.

Webster Baseboard Heating requires less piping. Takes no floor space. Provides maximum comfort and low operating costs through Webster outdoor control plus even temperatures attained by perimeter heating principles.



Monroe Park includes 149 buildings on beautifully landscaped grounds. Architect: Hal A. Miller & Associates, Baltimore. Heating Contractor: Gordon McKewin, Baltimore.

The authorized Webster factory representative will be glad to answer your questions on Webster Baseboard Heating. It may be what you are looking for. Literature on request.

Address Dept. AR-2  
**WARREN WEBSTER & CO.**  
Camden 5, N.J. Representatives in Principal Cities  
In Canada, Darling Brothers, Limited, Montreal

**Webster**  
**BASEBOARD**  
**HEATING**

## THE RECORD REPORTS

### CANADA

(Continued from page 230)

Here are the steps involved in getting a project of this sort under way:

1. Vancouver demonstrates its need for low-rental housing and makes site available at reasonable cost.
2. The province acquires title to the land, and engages the planning, engineering and surveying services.
3. Federal government's Central Mortgage & Housing Corp. designs and arranges for construction of the units.

The agreement calls for creation of a local housing authority to carry out the central operation and manage the project when completed. Units are to be in the form of apartment suites. They'll rent for an average minimum, inclusive of service charge, of \$25 per month.

### Toronto Plans Coordination With National Building Code

Long regarded as a model, the Toronto Building Bylaw is to be modernized and its administration simplified. All changes will be coordinated with the revised National Building Code now in preparation.

The city's Board of Control issued instructions to this effect following submission of a brief from a "Committee of Cooperation Organizations re Toronto Building Bylaw."

Represented on the committee are 18 professional, trade, industrial and business groups. D. C. Beam is chairman.

The brief states that for considerable time there has been need of a thorough review of the bylaw "with a view to revisions being made which will provide adequately recorded recognition of modern building materials and techniques."

In addition to urging that staff be hired to undertake this work, it advocated that the former Toronto Building Bylaw Revision Committee be replaced by a new Building Bylaw Advisory Committee, with personnel drawn from nominees of all interested organizations.

The brief pointed out that if revision was not commenced until the National Building Code was completed (by the end of 1952), it would be 1954 or later before Toronto would benefit.

Action taken by Board of Control will eliminate this time lag.

(Continued on page 234)

## USE THE WORLD'S BEST at NO EXTRA COST

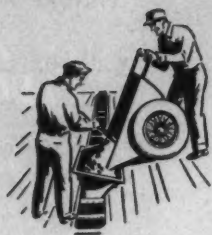
1. CASTELL DRAWING 9000
2. CASTELL LOCKTITE REFILL  
HOLDERS 9400—Black or Colored
3. CASTELL IMPORTED REFILL  
LEADS 9030

These encompass every mood of genius for drawing, drafting, tracing, sketching, blueprinting, etc.



• Premium products at regular prices. See your dealer today.

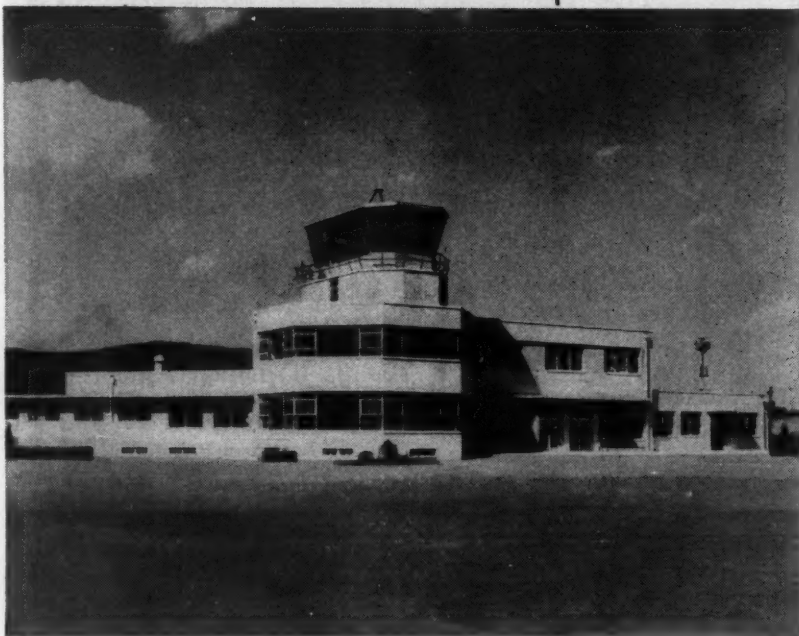
**AW FABER-CASTELL**  
PENCIL COMPANY INC. NEWARK, N.J.



### Better for structural work

The greater plasticity of Duraplastic concrete mixes aids proper placement and results in improved surface appearance.

An air-entraining portland cement, Duraplastic requires less water for a given slump. It has proved advantageous for all types of structural concrete.



### Makes more durable concrete

Because water gain and segregation are minimized by Duraplastic's air-entraining feature, the resulting concrete is fortified against the effects of freezing-thawing weather. (Left, Administration Building, McLaughlin Field, Hot Springs, Ark. Architects: Erhart, Eichenbaum and Rauch, Little Rock; contractors, Peterson & McFadyen, Little Rock.)

## YET DURAPLASTIC\* COSTS NO MORE

It sells at the same price as regular cement and requires no unusual changes in procedure. Complies with ASTM and Federal Specifications. For descriptive booklet, write Universal Atlas Cement Company (United States Steel Corporation Subsidiary), 100 Park Avenue, New York 17, N. Y.

**OFFICES:** Albany, Birmingham, Boston, Chicago, Dayton, Kansas City, Minneapolis, New York, Philadelphia, Pittsburgh, St. Louis, Waco.

\*"Duraplastic" is the registered trade mark of the air-entraining portland cement manufactured by Universal Atlas Cement Company.

**ATLAS®**

**DURAPLASTIC**

AIR-ENTRAINING PORTLAND CEMENT



AR-D-117

**Makes Better Concrete at No Extra Cost**

**"THE THEATRE GUILD ON THE AIR"**—Sponsored by U. S. Steel Subsidiaries—Sunday Evenings—NBC Network



- ▶ if you're using plywood...
- ▶ if you like natural wood finishes...
- ▶ you'll welcome these

## WIZARDS WITH WOOD



### **FIRZITE**—tames wild grain and checking on fir plywood and other soft woods.

For stained, natural effects, use Firzite to tame that wild grain.

For painted or enameled jobs, use Firzite to minimize face checking and grain raising.

For blond, pickled or tinted tones, use White Firzite for a real "woody" effect.

### **SATINLAC**—emphasizes the natural beauty of wood wall panels, trim, rails, doors, furniture, etc.

To bring out and preserve the natural grain and beauty of any wood, use Satinlac. To avoid that heavy, "built-up" finish, use Satinlac. Newer than shellac or varnish; water-white; will not turn yellow.

Write for suggested specifications to:  
**UNITED STATES PLYWOOD CORP.**  
Dept. 107, 55 W. 44th St., New York 18, N. Y.

## THE RECORD REPORTS

### CANADA

(Continued from page 232)

#### **Engineering Institute Adds Branch in Belleville, Ont.**

The Belleville, Ont., branch of the Engineering Institute of Canada has been given its charter.

Institute President James A. Vance performed the ceremony at an inaugural dinner. Principal speaker and guest of honor was Gen. A. G. L. McNaughton.

The new branch is the thirty-third to be formed by the Institute. Officers are F. F. Fulton, chairman; S. Sillitoe, secretary; W. L. Langlois, treasurer; and D. W. Bewes, councillor.

#### **Three Town Councils Seek To Vary House Architecture**

More varied house architecture for the Toronto area is the aim of the town councils of North York, Etobicoke and Toronto.

Each of the councils, on the advice of its planning board, has passed or is about to pass a bylaw requiring that "in a residential block or any flank thereof facing a street, not more than 20 per cent of the total number of houses shall be closely similar in either plan or elevation."

In other words, there must be five different dwelling types per street.

Mortgage companies have been asked to check all large-scale projects planned by their builder-clients. In the event of non-compliance with the new regulation, a building permit will be refused even though financing arrangements have been made.

The three townships get the lion's share of new housing in the Toronto metropolitan area. Planning consultant in each case is Dr. E. G. Faludi.

#### **N.R.C. Best Seller**

Most popular pamphlet issued by the Division of Building Research of the National Research Council, Ottawa, is "Condensation in the Home."

Condensation has become a subject of interest because of the increasing tightness of new construction and the high humidity maintained inside today's houses. The N.R.C. pamphlet explains the causes of condensation, what damage it may do, and how it can be prevented.

(Continued on page 236)

FLUORESCENT  
FIXTURE PERFORMANCE  
DEPENDS ON  
BALLAST QUALITY



**SOLA**

Sequenstart\* Ballasts

## keep your light output constant

within  $\pm 2\frac{1}{2}\%$  regardless of line  
voltage fluctuations of  $\pm 15\%$ .

#### **what this means to you**

Greatly varying electrical loads have made large line voltage fluctuations common. The patented SOLA Constant Wattage design of Sequenstart\* Ballasts insures constant light conditions, builds user satisfaction and places fluorescent lighting on a new level of dependability.

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Here are the significant advantages of SOLA Sequenstarts\* over conventional ballasts:

- Regulated light output through patented constant wattage design
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- Less wattage loss, lighter in weight and more compact with Sequenstart\* circuit design.

We will be happy to answer any questions you have about ballast design and application. You are invited to write for the technical bulletin giving complete electrical and mechanical specifications of SOLA Constant Wattage Ballasts. Request Bulletin T-PFL-144.

Compare ballast performance — then specify the outstanding performer.

**SOLA**

Sequenstart\*

Constant Wattage BALLASTS

**SOLA ELECTRIC COMPANY**

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\*Trademark

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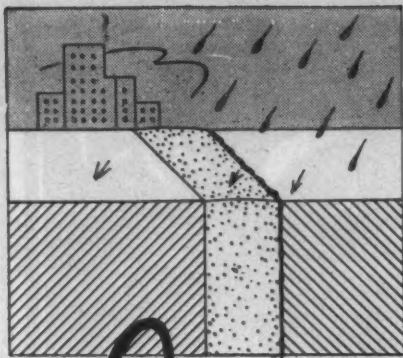
*Ocker Hill Power Station*

THE HOPE'S LOK'D BAR FACTORY SASH recently installed in this Power Station building are made to special size and layout. Their height, 63', 0", is indicated by the size of the figure in the lower right foreground. The mullions are 10 gauge pressed steel reinforced by structural members. Hope's LOK'D BAR Catalog describes, with full-scale drawings, the exclusive principle of their design, and Hope's Engineering Department will be glad to submit details for similar installations on request.

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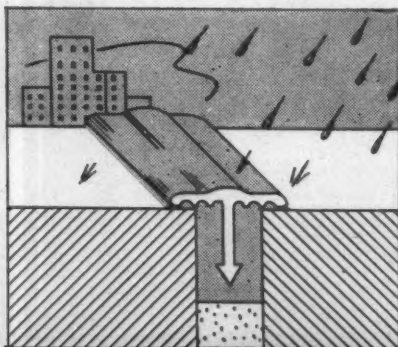
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AR-2-51

## THE RECORD REPORTS

### CANADA

(Continued from page 234)

#### Building Congress Program Names Canadian Engineers

Two Canadian engineers, Carson F. Morrison and Robert F. Legget, will prepare papers for the International Building Congress in London, England, next September 11-20.

Mr. Morrison is associate professor of civil engineering at the University of Toronto. Mr. Legget is director of the Building Research Division, National Research Council, Ottawa.

Object of the Congress, first of its type ever to be held, is to review developments made in architecture, building and the associated branches of civil engineering since the war, and to assess the influence they may have on future construction.

#### Property Owners' Group Urges Royal Commission

Appointment of a provincial Royal Commission to study municipal government and tax legislation was demanded in a resolution passed at the annual meeting of the Ontario Property Owners' Association in Toronto.

"Ownership of property is so heavily burdened by taxes," claimed Vice President R. M. Willes Chitty, K.C., "that use and development of real estate and land are being actively discouraged."

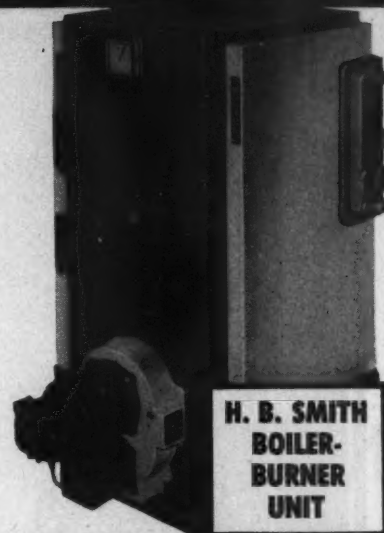
Reassessment in Toronto and elsewhere was sharply criticized as "enabling municipalities to be more extravagant with taxpayers' money and still avoid increasing the mill-rate enough to alarm voters."

Transportation, welfare services and education were also named as sources of distress.

The taxes imposed by municipalities today, declared Mr. Chitty, are based on principles laid down in century-old legislation.

"The sole purpose of land taxation," he pointed out, "is to provide services required for use and development of the property, and today's demands that the owner of land pay for roads, municipal welfare services and elaborate schools are in direct contradiction to the original aim."

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## HI-BOND Reinforcing Bar

It not only meets but exceeds the minimum standards set up by ASTM A305-49. Its proper ratio of bearing to shearing area provides greater bond between the steel and concrete thus providing more efficient transfer of stress at splices and reducing the size of tension cracks. This means a more efficient and better looking structure.

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### NORTON COMPANY

Worcester 6, Massachusetts



## THE RECORD REPORTS

(Continued from page 12)

Besides this, and in connection with the civil defense effort, Reconstruction Finance Corporation is budgeted \$65 million in fiscal year 1952—only \$5 million for the current fiscal period.

Eventual operation of the federal assistance plan calls for direct federal aid to communities on a 50-50 basis for construction of new bomb shelter facilities that will not pay for themselves through dual use over a period up to 50 years. And it also looks toward the federal government bearing half the cost of bombproofing existing structures. This might include construction of thicker reinforced concrete wall areas at such buildings as hospitals, or community centers. Or it could include the application of a bomb-proof roof area above existing roof deck.

But Congress refused to make any direct outlays for aiding localities in construction of shelter types such as large underground areas which might be used for car parking, or other remunerative purposes, during peacetime. For building these, it said, the community should apply to RFC for a loan.

### FCDA Publishes Check List

While awaiting Congressional action on the Federal Civil Defense Act, FCDA did take some preliminary steps in advising local communities. It has published a check list for cities, for example, which asked the following questions:

Have you made a survey of existing reinforced concrete structures which may be used as protective shelters in the event of a surprise attack?

Have these existing facilities been adequately marked as "shelters"?

What action has been taken by your local officials to review the current building codes so as to include shelter protection provisions?

Have you appointed an assistant director to administer the Shelter Protection Program?

Other questions in the list dealt with engineering services. These took up the subject of utilities: plans, blueprints and overlays of these services.

Following these efforts, the FCDA issued a booklet covering in fine detail the city's role, as the federal government sees it, in preparing for disaster from bomb attack.

(Continued on page 240)



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... that to do their work best they must have a finishing lime that's easy to work, smooth, and far spreading.



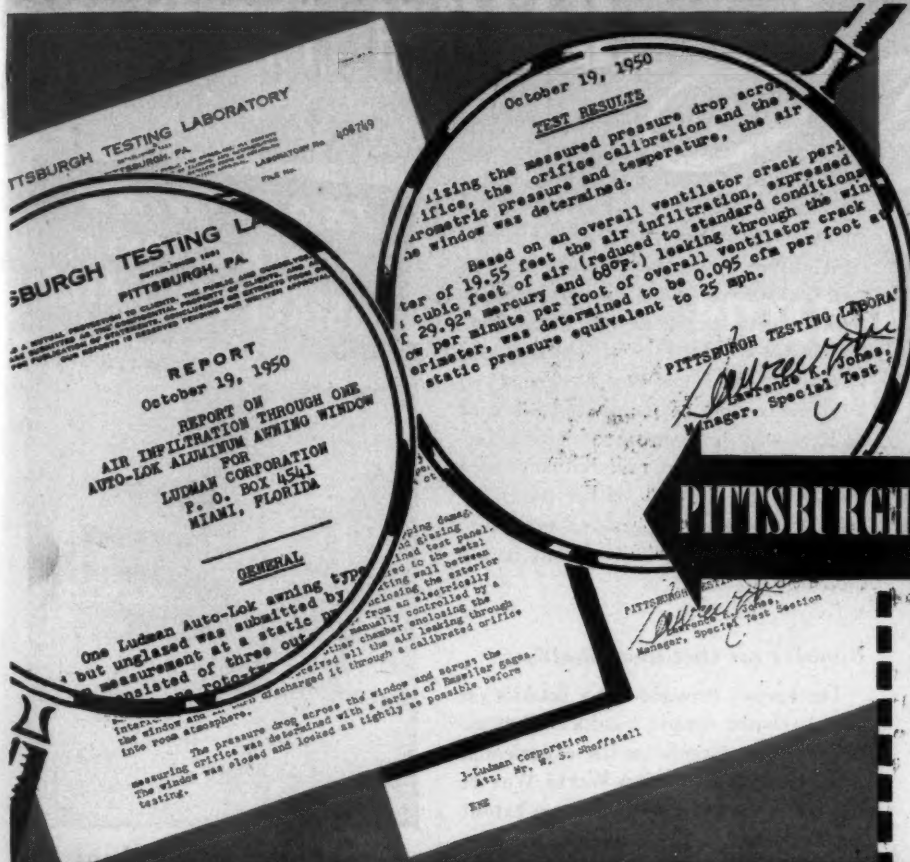
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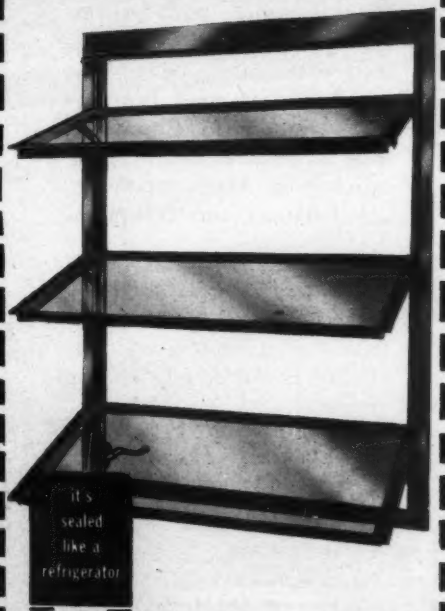
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**AUTO-LOK THE ALL-CLIMATE WINDOW** -- winning architectural acceptance everywhere because it:

- reduces air infiltration to a minimum.
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## THE RECORD REPORTS

(Continued from page 238)

The advice on bomb shelter construction — that is, specific advice — has been slower in coming, however. Just a few weeks ago national civil defense authorities advised home owners to proceed carefully on any plans of their own for construction of backyard bomb shelters or basement air raid areas. Better than two thirds of the money authorized in the new Act is earmarked for construction of communal air raid shelters and the bombproofing of existing buildings; but by mid-January there was no word of plans, either public or private, having been prepared as a guide to what kind of shelters should be established.

### Booklet on Outdoor Shelters

The agency brought out a booklet on how to build simple outdoor shelters. It was based largely on the experiences of England both during World War II and since, and followed to some extent the Anderson shelter principle. In connection with this, a spokesman for FCDA told ARCHITECTURAL RECORD the initial plans call for designating certain "target" areas where defense activity is concentrated. Now, cities in these areas cannot be advised to tell residents — all of them — to proceed with the construction of Anderson-type shelters. Therefore, advance recommendations have involved use of existing structures, stressing the heavy concrete construction.

The whole question is so involved that a month ago there still had not been any firm statement of policy from federal sources on the specifics of building to protect life and property against bomb damage.

By early spring, however, the agency was confident it would take the lead in national shelter construction. Officials are aware that a uniform policy is badly needed. The comprehensive program involves preparation of a number of design plans for different types of shelters to serve varying numbers of persons.

### Survey Under Way at Lehigh

The most direct approach so far toward determining exactly what the shelters should be like is found in a survey

(Continued on page 242)

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### Installs in cabinet over range... double inlets provide COMPLETE ventilation

Only the Super Clipper Kitchen Ventilating System—made by Trade-Wind—exhausts cooking fumes and heat from both the stove and at the ceiling level.

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## THE RECORD REPORTS

(Continued from page 240)

being conducted for the government by Lehigh University at Bethlehem, Pa. The University is under contract with the FCDA to produce a plan for bomb shelter construction. The Army Corps of Engineers is cooperating. Results of the Lehigh survey are expected around April 1. Presumably these will cover the field of public and private plans for shelters of all types — individual and communal.

It is not going to be easy sailing for the construction program. Voices of protest have been raised already in many quarters, those of architects among them. Some designers have objected strongly to large-scale use of dwelling basements. These can be potential death traps, particularly in such large cities as New York, where one architect estimated less than 10 per cent would provide adequate safe refuge from A-bomb attack.

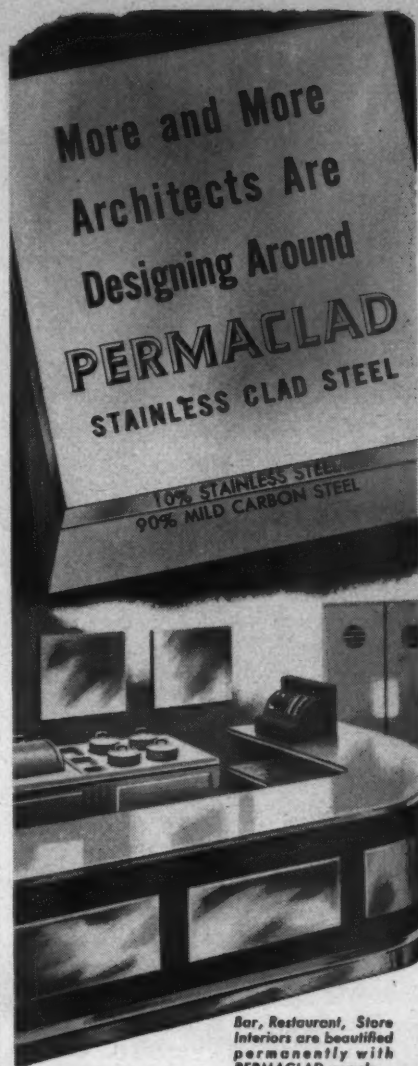
#### Parking Shelters Decried

The question of constructing vast underground areas to be used for parking automobiles in peacetime has drawn critical fire in many quarters. One attitude was summed up by Prof. Michael Goodman, of the Department of Architecture of the University of California, Berkeley, Calif. He was a civil defense planner for the western states during the last war.

Said Professor Goodman: "With all those cars and gasoline around, all they'd be good for is funeral pyres. It'd be just as sensible to use gasoline storage tanks for bomb shelters."

Then, there always is the big question: How far is Congress willing to go in appropriating funds? The problem is a terribly expensive one. The more than \$2 billion authorized now for a construction program could not possibly provide shelter for all the people. England has estimated that it would cost that country at least \$2 billion to provide just public shelter for its smaller population.

Another very important consideration is the use of construction materials in any vast shelter building program. How much of a priority should shelter construction have? A sudden wave of enthusiasm on the part of home owners to begin constructing their own bomb shelters — the backyard type — could give officials cause for great worry over the strain on materials supply. — E. M.



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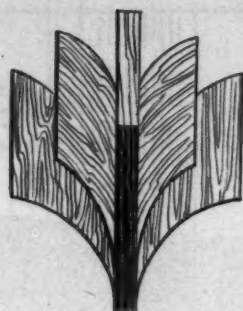
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The Roddiscraft Housemart Door is generously made throughout. Extra wide top and bottom rails allow for trimming—ample edge strips provide a firm foundation for hardware—lock blocks both sides with inner edge 5 inches from door's outer edge.

Designed and priced for residences and multiple dwelling units, the Roddiscraft Housemart Door has proved itself a beauty with brawn in all types of installations.

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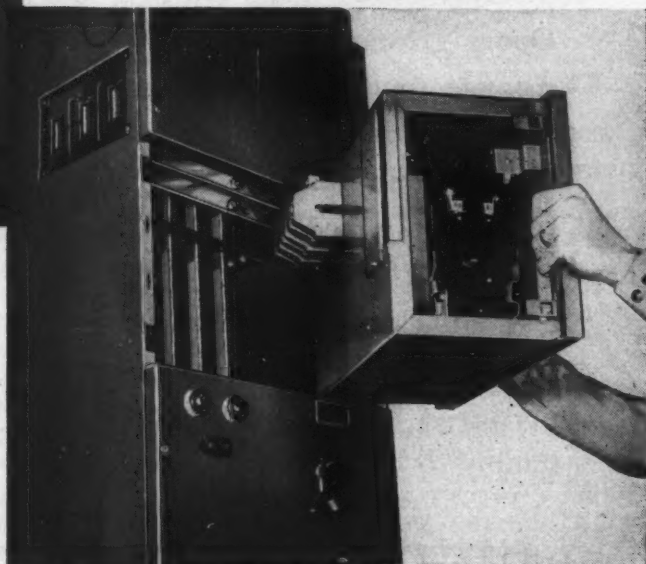
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Compact trough design allows more troughs to be used in a given area of floor space.

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Generous (4 x 8 in.) wiring gutter makes wiring easier—can be accomplished with units in the trough—and allows use of over-size cable on long runs, keeping voltage drop low.

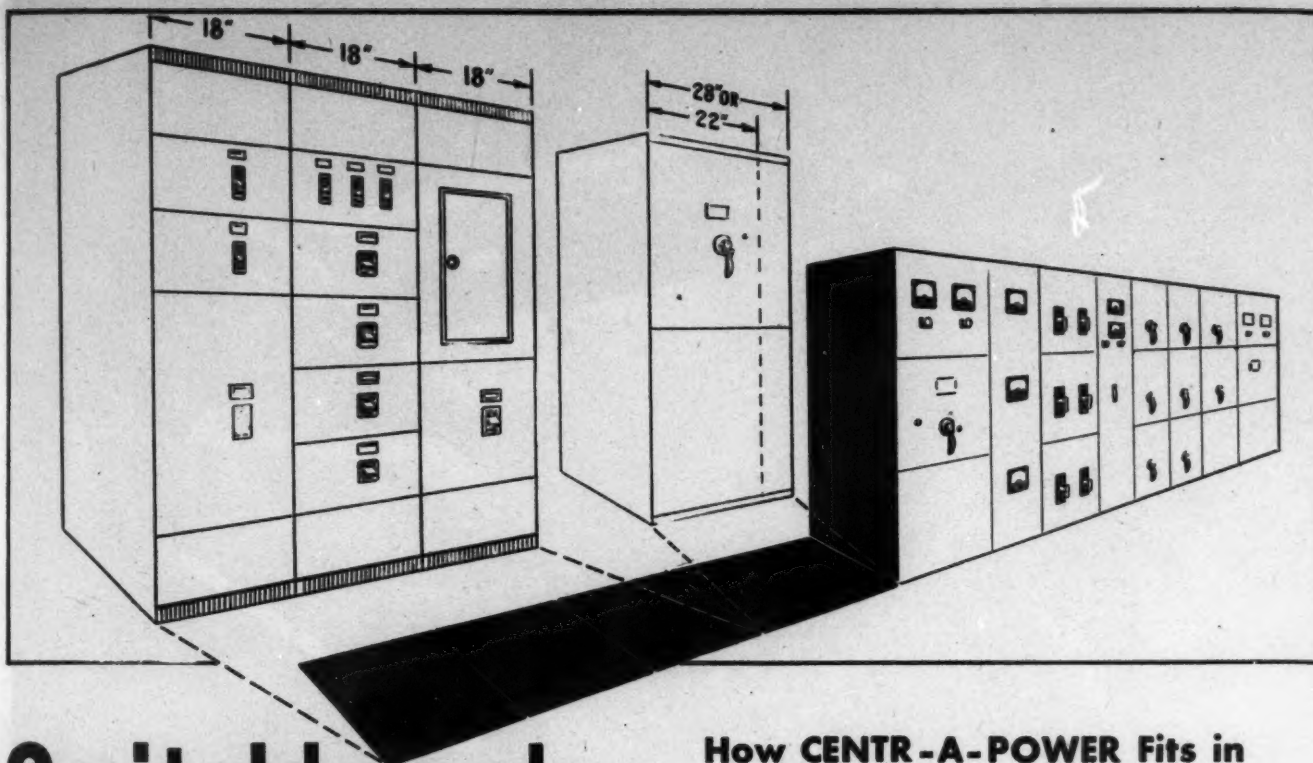


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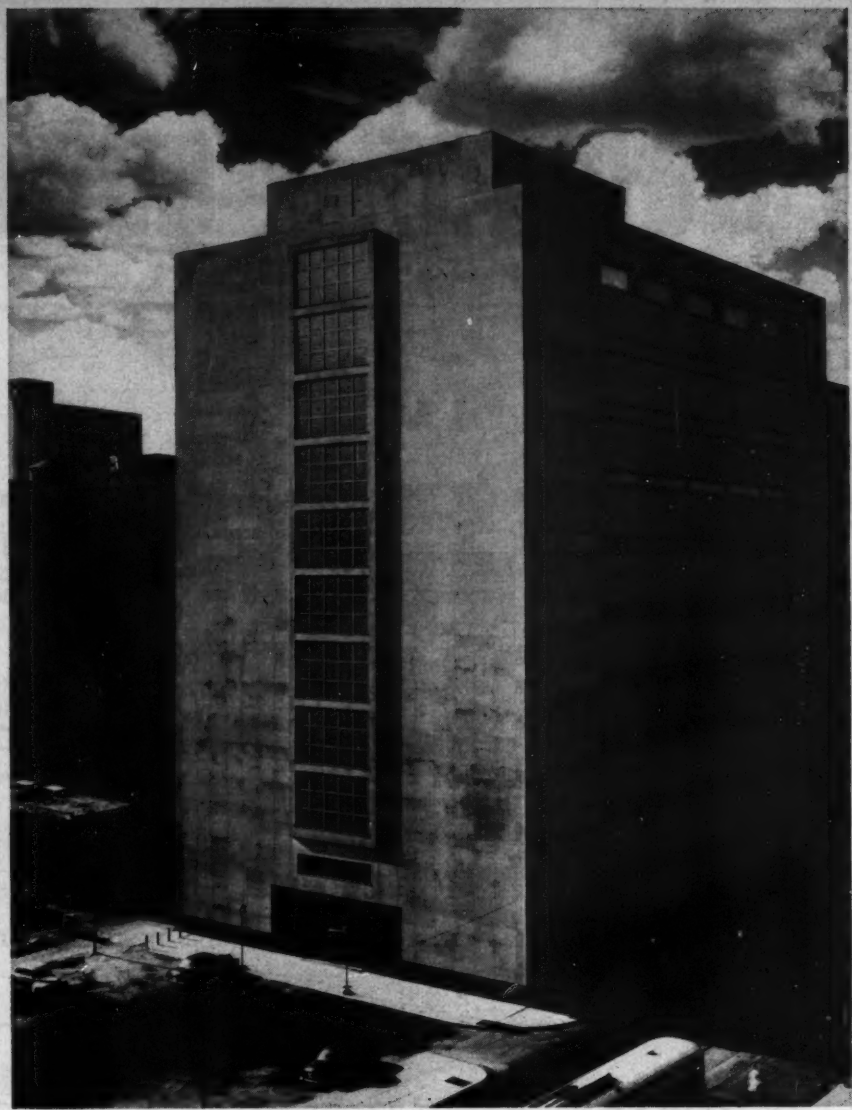
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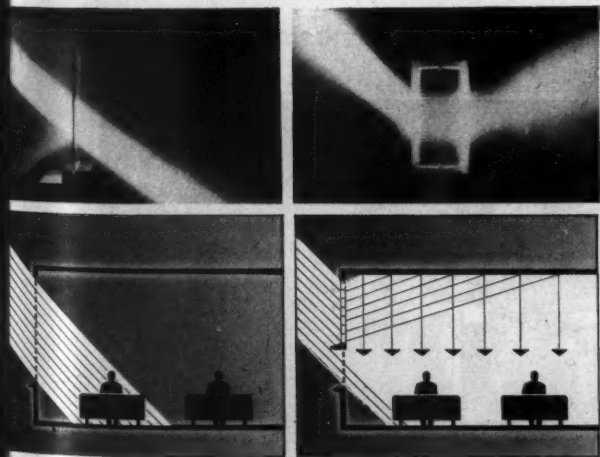
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Standard Kentile may be affected by grease and oil. For this type of area, specify SPECIAL KENTILE which is greaseproof. SPECIAL KENTILE is now available in new *deluxe* colors...lighter and brighter. Cost is approximately 40¢ per sq. ft. of 1/8" thickness.



# with long-lasting Kentile Floors

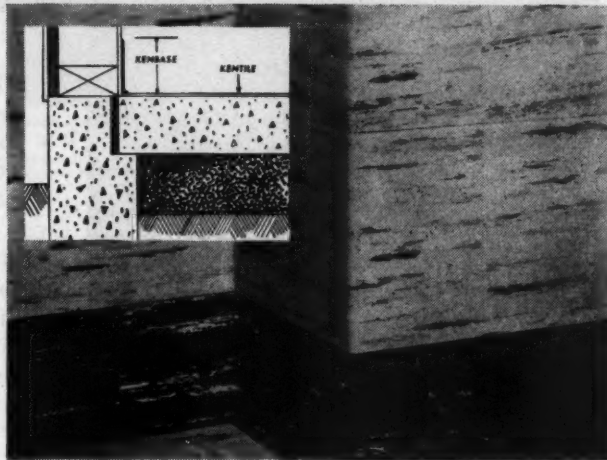
## WALL BASE:

Use Kenbase for sanitary meeting of wall with floor. Never needs painting ...mop and scuff marks won't show.

### **COLORS:**

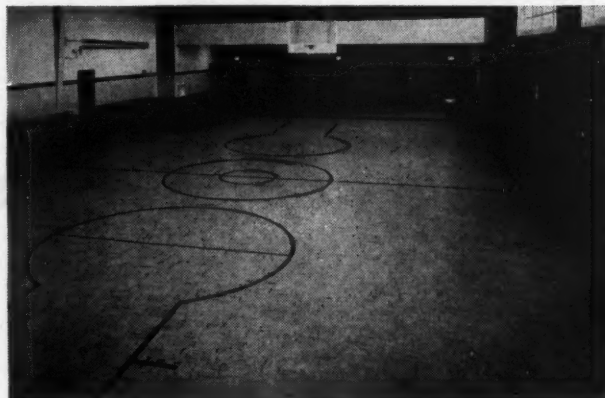
Black  
Quarry Red  
Green  
Tan  
Grand Antique  
Sarrancolin

Heights—4" and 6"  
Length—24"  
Wall Thickness— $\frac{1}{2}$ "  
Floor Lip— $\frac{1}{2}$ "



## KENTILE FUNCTIONAL DESIGNS:

Colors never wear off...never need repainting. This type of treatment available for directional traffic lanes, trade marks, fraternal insignia, alphabets, basketball courts and numerals...or engineered to your specifications.



# KENTILE.

The Asphalt Tile of  
Enduring Beauty

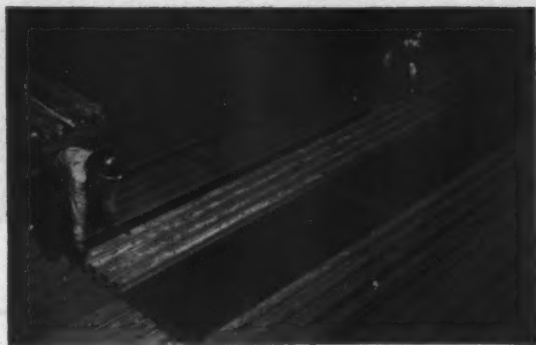


KENTILE, INC., 58 Second Ave., Brooklyn 15, N. Y. • 350 Fifth Ave., New York 1, N. Y. • 705 Architects Bldg., 17th and Sansom Sts., Philadelphia 3, Pa. • 1211 NBC Bldg., Cleveland 14, Ohio • 225 Moore St., S.E., Atlanta 2, Ga. • Kansas City Merchandise Mart Inc., 2201-5 Grand Ave., Kansas City 8, Mo. • 1440 11th St., Denver 4, Colo. • 4532 South Kolin Ave., Chicago 32, Ill. • 1113 Vine St., Houston 1, Texas • 4501 Santa Fe Ave., Los Angeles 58, Calif. • 95 Market St., Oakland 4, Calif. • 452 Statler Bldg., Boston 16, Mass.





600 Fifth Avenue, New York City  
 Architects: Carson & Lundin  
 Mechanical Engineers: Jaros, Baum & Bolles  
 Electrical Engineers: Smith & Silverman  
 Builders: Turner Construction Co.  
 Electrical Contractors: J. Livingston & Co.



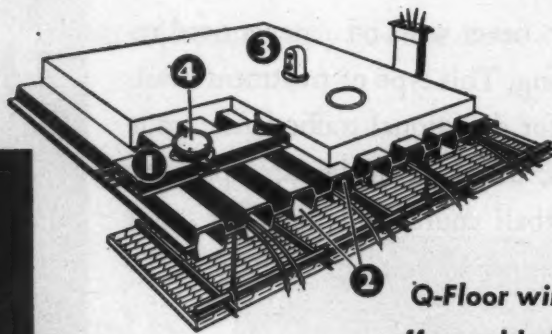
Raceways go in as the Q-Floor is laid, because—with G-E Q-Floor wiring—the floor is the raceway system. Each floor cell is a complete raceway, ready to receive wire, ready for electrical changes any time during the life of the building.

## Planned TODAY for TOMORROW'S Electrical Loads with G-E Q-Floor Wiring

This new building at 600 Fifth Ave., New York City, now under construction by the Massachusetts Mutual Life Insurance Co. is another to join the ever-growing list of modern office buildings which were planned, during the blueprint stage, for future electrical flexibility.

By specifying a General Electric Q-Floor wiring system, provision has been made for increased power loads and unforeseen changes in office layout throughout the entire life of the building. If changes are necessary, tenants won't be disturbed nor vital building facilities disrupted, because the Q-Floor raceway network places additional power or communication outlets within six inches of any point on the floor. To add a new outlet a small hole is drilled through the top of the raceway cell. Then the outlet is wired and set into place—that's all there is to it! Outlets can be removed just as easily when they are no longer needed.

For complete information on wiring installations for new commercial, industrial, or institutional buildings, contact your nearest G-E district office or H. H. Robertson office. Or write to Section C12-25, Construction Materials Department, General Electric Company, Bridgeport 2, Connecticut.



**Q-Floor wiring system**  
 offers added electrical flexibility

- 1 Header duct—at right angles to Q-Floor—carries wire from load center to cells.
- 2 Cells serve as raceways for power, signal, and telephone systems.
- 3 Floor outlets are installed by drilling Q-Floor cells at any point.
- 4 Junction units in header duct permit easy access to wiring at any time.

*You can put your confidence in—*  
**GENERAL  ELECTRIC**

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When you're considering doors...

## Here are some **COLD FACTS** about a **HOT PROBLEM**

*Low Heat Transmission is  
another reason why you  
should choose Weldwood  
Fire Doors*

Fire protection has two sides to it. Of course, it's necessary to block passage of the flames. Another requirement . . . and more difficult to meet in the past . . . is the maintenance of reasonably low temperatures in the protected area, so that *heat* can't damage contents (or even start a new blaze).

In a word, the ideal fire door should *insulate*.

Weldwood® Fire Doors (Underwriter-labeled for Class "B" openings) do just that. In a recent test, the temperature one foot away from the unexposed side of a Weldwood Fire Door stayed down to only 102°F., after one hour's exposure to flame. Indeed, the temperature of this unexposed face of the door was well under 400°!

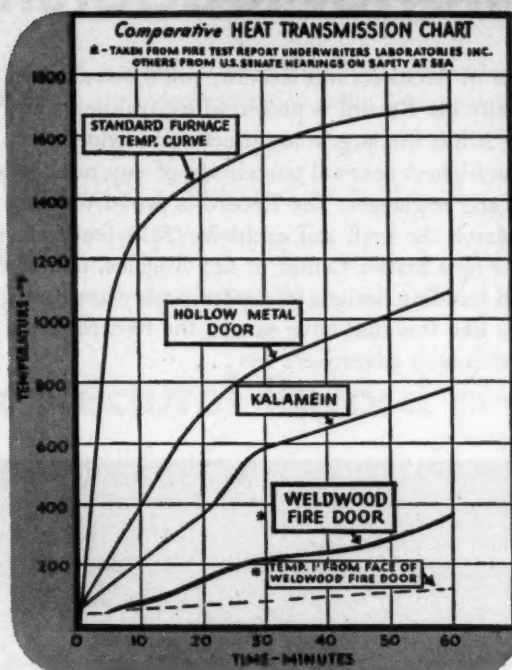
The chart shows you how that compares with both Kalamein and hollow metal doors...*cold facts* that prove the superiority of Weldwood Fire Doors.

And when you consider the bonus of beauty you get in the wide variety of faces of imported and domestic hardwoods . . . you'll start reaching for your fountain pen to o.k. the order.

Now you'll get a pleasant surprise. For the price on that order is astonishingly low . . . so low that no modern building can afford to be without the protection these doors give it.

Weldwood Fire Doors are now available in standard sizes up to 4' wide. If desired, they can be furnished with a 10" x 10" glazed light.

You owe it to yourself to get complete information on this Underwriter-labeled Fire Door. Write today, and ask us to send you full details.



The "100 Memorial Drive Apartments," Cambridge, Mass., give fire protection a dressed-up appearance with Weldwood Fire Doors in the corridors. A. Osborne Willauer & Thomas Worcester, Inc., were the architects.

### For Companion-Installation . . . choose **THE WELDWOOD STAY-STRATE DOOR**

While this door has the same incombustible Kaylo Core material as the Fire Door, it doesn't carry the Underwriters' Label.

It does, however, offer extraordinary fire protection . . . as well as other advantages, such as dimensional stability, light weight, permanent resistance to vermin and decay, and modest cost.

Available in the same beautiful hardwood facings, the Weldwood Stay-Strate Door can be used for interior or exterior service.

United States Plywood Corporation carries the most complete line of flush doors on the market including the famous Weldwood Fire Doors, Weldwood Stay-Strate Doors, Weldwood Honeycomb Doors, Mengel Hollow-core Doors, Mengel and Algoma Lumber Core Doors, 1 3/4" and 1 3/8" with a variety of both foreign and domestic face veneers.



**WELDWOOD FLUSH DOORS**  
Manufactured and distributed by  
**UNITED STATES PLYWOOD CORPORATION**  
55 West 44th Street, New York 18, N. Y.  
Branches in Principal Cities • Distributing Units in Chief Trading Areas  
Dealers Everywhere

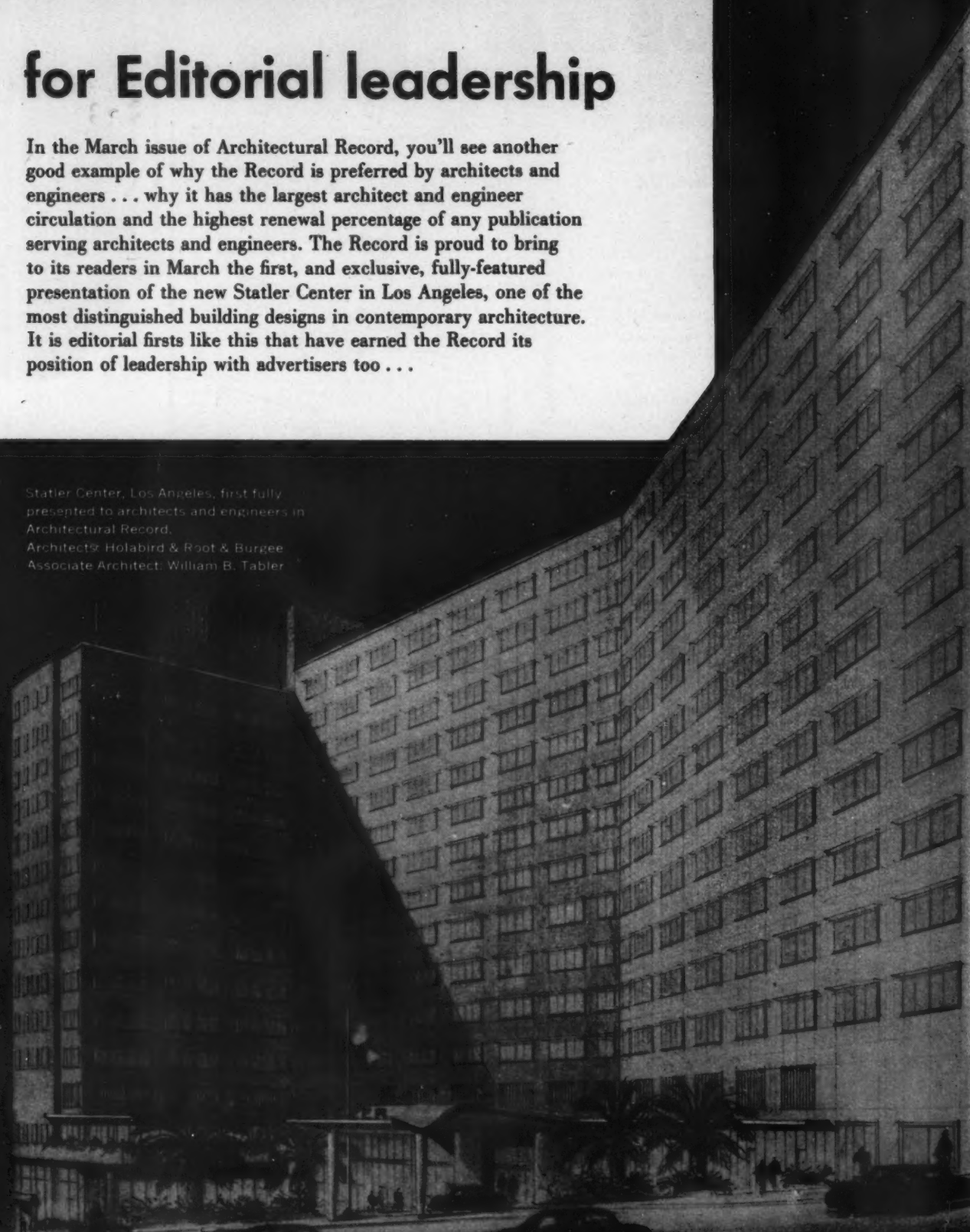


# Look at the Record...

## for Editorial leadership

In the March issue of Architectural Record, you'll see another good example of why the Record is preferred by architects and engineers . . . why it has the largest architect and engineer circulation and the highest renewal percentage of any publication serving architects and engineers. The Record is proud to bring to its readers in March the first, and exclusive, fully-featured presentation of the new Statler Center in Los Angeles, one of the most distinguished building designs in contemporary architecture. It is editorial firsts like this that have earned the Record its position of leadership with advertisers too . . .

Statler Center, Los Angeles, first fully  
presented to architects and engineers in  
Architectural Record.  
Architects: Holabird & Root & Burgee  
Associate Architect: William B. Tabler



## for Advertising leadership

Year after year, more advertisers place more pages of advertising in Architectural Record than in any other publication in the field. Advertising volume in 1950:

Architectural Record . . . . . 2,177 pages  
Magazine of Building . . . . . 1,960 pages  
Progressive Architecture . . . . . 1,209 pages

### **Architectural Record** carried:

217 more pages than Magazine of Building

968 more pages than Progressive Architecture

Source: Industrial Marketing, January 1951

## **Architectural Record**

published  
by



"workbook  
of the  
architect-  
engineer"


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# ART METAL speeds Specification Writing and Installation Planning for all types of INCANDESCENT LIGHTING ... by detailing product performance and construction

### SURFACE ATTACHED TWO-LIGHT—8 1/2" AND 12" HOLOPHANE CONTROLS\*




These end-on-end distribution curves were made with Two-light units using 2-200 Watt I.P. Lamp. Multiply by 1.63 for 2,400 Watt I.P. Medium Base Lamp. The controlled end-on-end light distribution characteristic of Catalog No. 2322 provides even light distribution with units installed on spacing not to exceed one and one-quarter times the mounting height above the work plane.

The concentrating light distribution characteristic of Catalog No. 2323 provides even light distribution in high radiating areas with units installed on spacing not to exceed 5 times the mounting height above the work plane.

**Fig. 2322 Fig. 2323**

### ONE-LIGHT—8 1/2" AND 12" HOLOPHANE CONTROLS\*

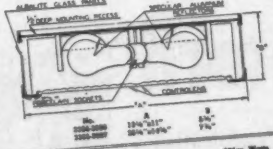


These end-on-end distribution curves were made with One-light units using a 100 Watt I.P. Lamp. The controlled end-on-end light distribution characteristic of Catalog No. 2320 provides even light distribution with units installed on spacing not to exceed one and one-quarter times the mounting height above the work plane.

The concentrating light distribution characteristic of Catalog No. 2321 provides even light distribution in high radiating areas with units installed on spacing not to exceed 5 times the mounting height above the work plane.

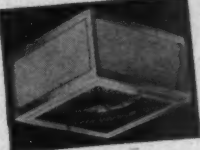
**Fig. 2320 Fig. 2321**

### SURFACE ATTACHED



**Fig. 2322 Fig. 2323**

### SURFACE ATTACHED



**Fig. 2320 Fig. 2321**

**COEFFICIENTS OF UTILIZATION ON OPPOSITE PAGE FOR Nos. 2324 AND 2325.**

**COEFFICIENTS OF UTILIZATION**

Room Category	2322	2323	2320	2321
General	0.40	0.45	0.40	0.45
Classroom	0.45	0.50	0.45	0.50
Office	0.50	0.55	0.50	0.55
Store	0.55	0.60	0.55	0.60
School	0.60	0.65	0.60	0.65
Hospital	0.65	0.70	0.65	0.70
Hotel	0.70	0.75	0.70	0.75

**OVERALL DIMENSIONS ON CEILING**

Unit No.	Characteristics	Length	Width	Depth
2322	Unidirectional	12 1/2"	11"	7 1/4"
2323	Unidirectional	12 1/2"	11"	7 1/4"
2320	Unidirectional	12 1/2"	11"	7 1/4"
2321	Unidirectional	12 1/2"	11"	7 1/4"

**COEFFICIENTS OF UTILIZATION ON WALL**

Room Category	2322	2323	2320	2321
General	0.35	0.40	0.35	0.40
Classroom	0.40	0.45	0.40	0.45
Office	0.45	0.50	0.45	0.50
Store	0.50	0.55	0.50	0.55
School	0.55	0.60	0.55	0.60
Hospital	0.60	0.65	0.60	0.65
Hotel	0.65	0.70	0.65	0.70

**OVERALL DIMENSIONS ON WALL**

Unit No.	Characteristics	Length	Width	Depth
2322	Unidirectional	12 1/2"	11"	7 1/4"
2323	Unidirectional	12 1/2"	11"	7 1/4"
2320	Unidirectional	12 1/2"	11"	7 1/4"
2321	Unidirectional	12 1/2"	11"	7 1/4"

**COEFFICIENTS OF UTILIZATION ON FLOOR**

Room Category	2322	2323	2320	2321
General	0.30	0.35	0.30	0.35
Classroom	0.35	0.40	0.35	0.40
Office	0.40	0.45	0.40	0.45
Store	0.45	0.50	0.45	0.50
School	0.50	0.55	0.50	0.55
Hospital	0.55	0.60	0.55	0.60
Hotel	0.60	0.65	0.60	0.65

**OVERALL DIMENSIONS ON FLOOR**

Unit No.	Characteristics	Length	Width	Depth
2322	Unidirectional	12 1/2"	11"	7 1/4"
2323	Unidirectional	12 1/2"	11"	7 1/4"
2320	Unidirectional	12 1/2"	11"	7 1/4"
2321	Unidirectional	12 1/2"	11"	7 1/4"

**COEFFICIENTS OF UTILIZATION ON WALL AND FLOOR**

Room Category	2322	2323	2320	2321
General	0.35	0.40	0.35	0.40
Classroom	0.40	0.45	0.40	0.45
Office	0.45	0.50	0.45	0.50
Store	0.50	0.55	0.50	0.55
School	0.55	0.60	0.55	0.60
Hospital	0.60	0.65	0.60	0.65
Hotel	0.65	0.70	0.65	0.70

**OVERALL DIMENSIONS ON WALL AND FLOOR**

Unit No.	Characteristics	Length	Width	Depth
2322	Unidirectional	12 1/2"	11"	7 1/4"
2323	Unidirectional	12 1/2"	11"	7 1/4"
2320	Unidirectional	12 1/2"	11"	7 1/4"
2321	Unidirectional	12 1/2"	11"	7 1/4"

**COEFFICIENTS OF UTILIZATION ON OPPOSITE PAGE FOR Nos. 2324 AND 2325.**

**COEFFICIENTS OF UTILIZATION**

Room Category	2324	2325
General	0.40	0.45
Classroom	0.45	0.50
Office	0.50	0.55
Store	0.55	0.60
School	0.60	0.65
Hospital	0.65	0.70
Hotel	0.70	0.75

**OVERALL DIMENSIONS ON CEILING**

Unit No.	Characteristics	Length	Width	Depth
2324	Unidirectional	12 1/2"	11"	7 1/4"
2325	Unidirectional	12 1/2"	11"	7 1/4"

**COEFFICIENTS OF UTILIZATION ON WALL**

Room Category	2324	2325
General	0.35	0.40
Classroom	0.40	0.45
Office	0.45	0.50
Store	0.50	0.55
School	0.55	0.60
Hospital	0.60	0.65
Hotel	0.65	0.70

**OVERALL DIMENSIONS ON WALL**

Unit No.	Characteristics	Length	Width	Depth
2324	Unidirectional	12 1/2"	11"	7 1/4"
2325	Unidirectional	12 1/2"	11"	7 1/4"

**COEFFICIENTS OF UTILIZATION ON FLOOR**

Room Category	2324	2325
General	0.30	0.35
Classroom	0.35	0.40
Office	0.40	0.45
Store	0.45	0.50
School	0.50	0.55
Hospital	0.55	0.60
Hotel	0.60	0.65

**OVERALL DIMENSIONS ON FLOOR**

Unit No.	Characteristics	Length	Width	Depth
2324	Unidirectional	12 1/2"	11"	7 1/4"
2325	Unidirectional	12 1/2"	11"	7 1/4"

**COEFFICIENTS OF UTILIZATION ON WALL AND FLOOR**

Room Category	2324	2325
General	0.35	0.40
Classroom	0.40	0.45
Office	0.45	0.50
Store	0.50	0.55
School	0.55	0.60
Hospital	0.60	0.65
Hotel	0.65	0.70

**OVERALL DIMENSIONS ON WALL AND FLOOR**

Unit No.	Characteristics	Length	Width	Depth
2324	Unidirectional	12 1/2"	11"	7 1/4"
2325	Unidirectional	12 1/2"	11"	7 1/4"

**COEFFICIENTS OF UTILIZATION ON OPPOSITE PAGE FOR Nos. 2324 AND 2325.**

**COEFFICIENTS OF UTILIZATION**

Room Category	2324	2325
General	0.40	0.45
Classroom	0.45	0.50
Office	0.50	0.55
Store	0.55	0.60
School	0.60	0.65
Hospital	0.65	0.70
Hotel	0.70	0.75

**OVERALL DIMENSIONS ON CEILING**

Unit No.	Characteristics	Length	Width	Depth
2324	Unidirectional	12 1/2"	11"	7 1/4"
2325	Unidirectional	12 1/2"	11"	7 1/4"

**COEFFICIENTS OF UTILIZATION ON WALL**

Room Category	2324	2325
General	0.35	0.40
Classroom	0.40	0.45
Office	0.45	0.50
Store	0.50	0.55
School	0.55	0.60
Hospital	0.60	0.65
Hotel	0.65	0.70

**OVERALL DIMENSIONS ON WALL**

Unit No.	Characteristics	Length	Width	Depth
2324	Unidirectional	12 1/2"	11"	7 1/4"
2325	Unidirectional	12 1/2"	11"	7 1/4"

**COEFFICIENTS OF UTILIZATION ON FLOOR**

Room Category	2324	2325
General	0.30	0.35
Classroom	0.35	0.40
Office	0.40	0.45
Store	0.45	0.50
School	0.50	0.55
Hospital	0.55	0.60
Hotel	0.60	0.65

**OVERALL DIMENSIONS ON FLOOR**

Unit No.	Characteristics	Length	Width	Depth
2324	Unidirectional	12 1/2"	11"	7 1/4"
2325	Unidirectional	12 1/2"	11"	7 1/4"

**COEFFICIENTS OF UTILIZATION ON WALL AND FLOOR**

Room Category	2324	2325
General	0.35	0.40
Classroom	0.40	0.45
Office	0.45	0.50
Store	0.50	0.55
School	0.55	0.60
Hospital	0.60	0.65
Hotel	0.65	0.70

**OVERALL DIMENSIONS ON WALL AND FLOOR**

Unit No.	Characteristics	Length	Width	Depth
2324	Unidirectional	12 1/2"	11"	7 1/4"
2325	Unidirectional	12 1/2"	11"	7 1/4"

**COEFFICIENTS OF UTILIZATION ON OPPOSITE PAGE FOR Nos. 2324 AND 2325.**

**COEFFICIENTS OF UTILIZATION**

Room Category	2324	2325
General	0.40	0.45
Classroom	0.45	0.50
Office	0.50	0.55
Store	0.55	0.60
School	0.60	0.65
Hospital	0.65	0.70
Hotel	0.70	0.75

**OVERALL DIMENSIONS ON CEILING**

Unit No.	Characteristics	Length	Width	Depth
2324	Unidirectional	12 1/2"	11"	7 1/4"
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**COEFFICIENTS OF UTILIZATION ON WALL**

Room Category	2324	2325
General	0.35	0.40
Classroom	0.40	0.45
Office	0.45	0.50
Store	0.50	0.55
School	0.55	0.60
Hospital	0.60	0.65
Hotel	0.65	0.70

**OVERALL DIMENSIONS ON WALL**

Unit No.	Characteristics	Length	Width	Depth
2324	Unidirectional	12 1/2"	11"	7 1/4"
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**COEFFICIENTS OF UTILIZATION ON FLOOR**

Room Category	2324	2325
General	0.30	0.35
Classroom	0.35	0.40
Office	0.40	0.45
Store	0.45	0.50
School	0.50	0.55
Hospital	0.55	0.60
Hotel	0.60	0.65

**OVERALL DIMENSIONS ON FLOOR**

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**COEFFICIENTS OF UTILIZATION ON WALL AND FLOOR**

Room Category	2324	2325
General	0.35	0.40
Classroom	0.40	0.45
Office	0.45	0.50
Store	0.50	0.55
School	0.55	0.60
Hospital	0.60	0.65
Hotel	0.65	0.70

**OVERALL DIMENSIONS ON WALL AND FLOOR**

Unit No.	Characteristics	Length	Width	Depth
2324	Unidirectional	12 1/2"	11"	7 1/4"
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**COEFFICIENTS OF UTILIZATION ON OPPOSITE PAGE FOR Nos. 2324 AND 2325.**

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Room Category	2324	2325
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Classroom	0.45	0.50
Office	0.50	0.55
Store	0.55	0.60
School	0.60	0.65
Hospital	0.65	0.70
Hotel	0.70	0.75

**OVERALL DIMENSIONS ON CEILING**

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Classroom	0.40	0.45
Office	0.45	0.50
Store	0.50	0.55
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Hotel	0.65	0.70

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**COEFFICIENTS OF UTILIZATION ON FLOOR**

Room Category	2324	2325
General	0.30	0.35
Classroom	0.35	0.40
Office	0.40	0.45
Store	0.45	0.50
School	0.50	0.55
Hospital	0.55	0.60
Hotel	0.60	0.65

**OVERALL DIMENSIONS ON FLOOR**

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**COEFFICIENTS OF UTILIZATION ON WALL AND FLOOR**

Room Category	2324	2325
General	0.35	0.40
Classroom	0.40	0.45
Office	0.45	0.50
Store	0.50	0.55
School	0.55	0.60
Hospital	0.60	0.65
Hotel	0.65	0.70

**OVERALL DIMENSIONS ON WALL AND FLOOR**

Unit No.	Characteristics	Length	
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**From any angle,  
quality and precision fabrication  
distinguish Pittsburgh Doorways**

Heavy steel construction, reinforcing the heavy extruded aluminum frame, prevents Pittsburgh Doorways from getting out of line and permits Herculite Doors to swing easily always. In this lower section of the frame, note side-light track—an integral part of several standard style Pittsburgh Doorways. Also note how the unique Pittco Checking Floor Hinge is permanently placed in its reinforced box.

● Because of these quality features and careful workmanship, it is easy to understand why Pittsburgh Doorways are noted for their lasting satisfaction and for their ability to cut labor costs on the job to a minimum.

Pittsburgh Doorways are factory-assembled to precision standards. Expert craftsmen use special checking gauges to assure absolute accuracy of all dimensions. This means the saving of several days' installation work at the site. There are no time-consuming calculations, no costly fitting, locating or fabricating details in the field.

Think of the *total-installed cost*—not just the list price; consider the quality manufacture that marks every detail of construction and you'll choose Pittsburgh Doorways every time! For complete information, write today to Pittsburgh Plate Glass Company, 2049-1 Grant Building, Pittsburgh 19, Pennsylvania.



Architects: Fuller & Beckett, Atlanta, Ga.

*Pittsburgh*  
**DOORWAYS**



PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY





## United Nations Secretariat

# AIR CONDITIONED BY CARRIER

Why did the architects select the Carrier Conduit Weathermaster system for the United Nations Secretariat?

Mainly because the Carrier Conduit Weathermaster system is the most successful system devised for large multi-room buildings. Because return ducts are eliminated, because primary air is supplied at high pressure through small diameter conduits, the Carrier Conduit Weathermaster system saved space equivalent to two floors of the Secretariat. Because the prefabricated fittings and conduits were easy to handle, store and install, the Carrier Conduit Weathermaster system reduced building costs.

But the architects had in mind, too, the 4000 men and women who will occupy the Secretariat. These representatives of 59 nations get constant ventilation without drafts; individual climate control in each office at the turn of a dial; silent operation because there are no moving parts in the Weathermaster units; privacy because without return ducts there is no transmission of sound.

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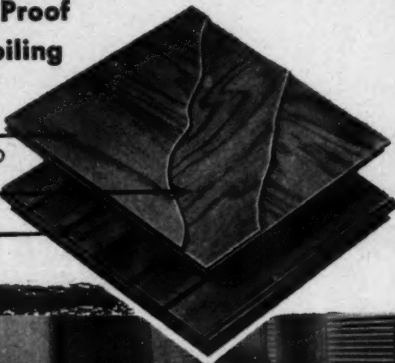
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Two truck terminals in Memphis. Hulsey and Hall, architects; H. B. Hunter, structural engineer.

Upper photo: Office and warehouse, Kimbel Lines; Building Constructors, Inc., contractor.

Lower photo: Office and maintenance shops of Dealers Transport Company. B. E. Buffalo, contractor.



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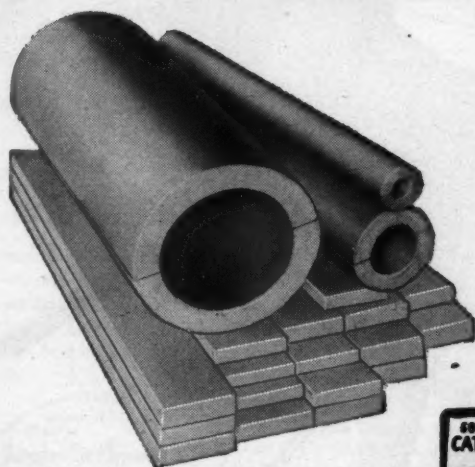
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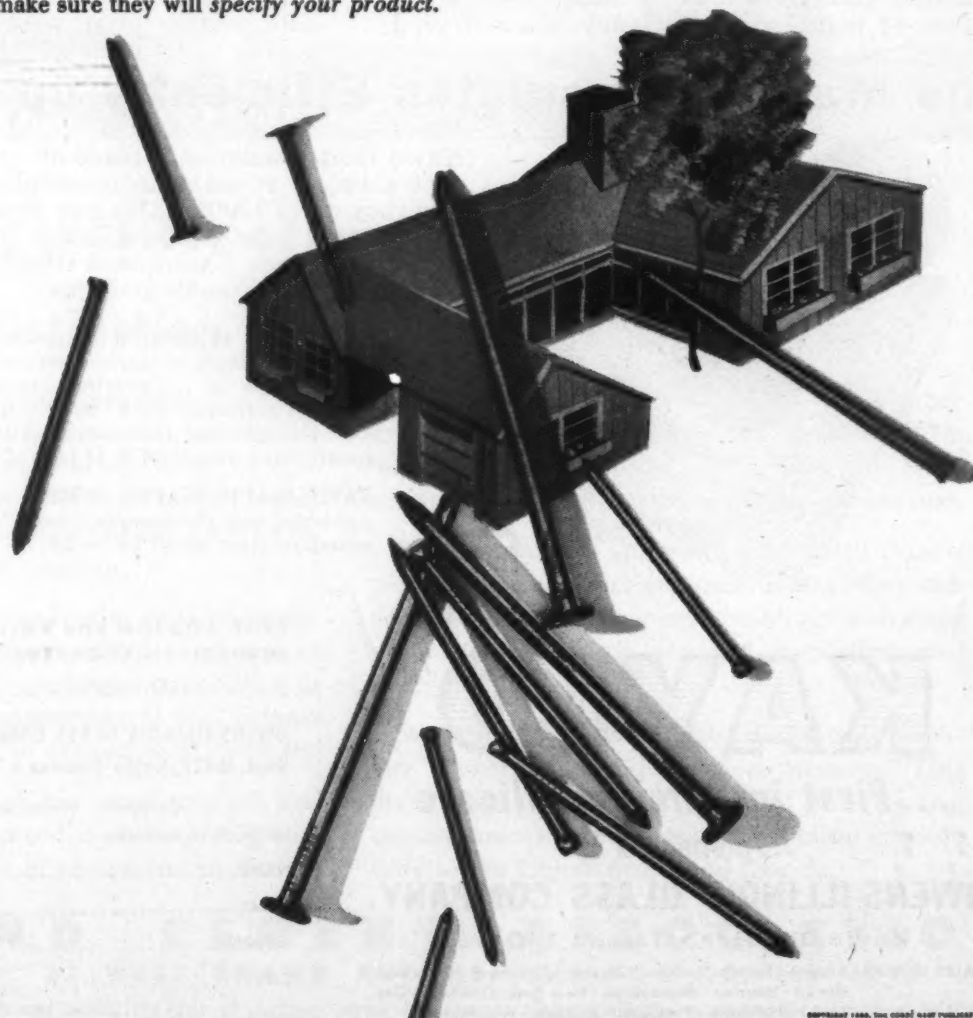


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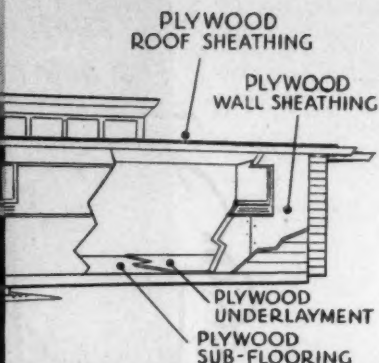
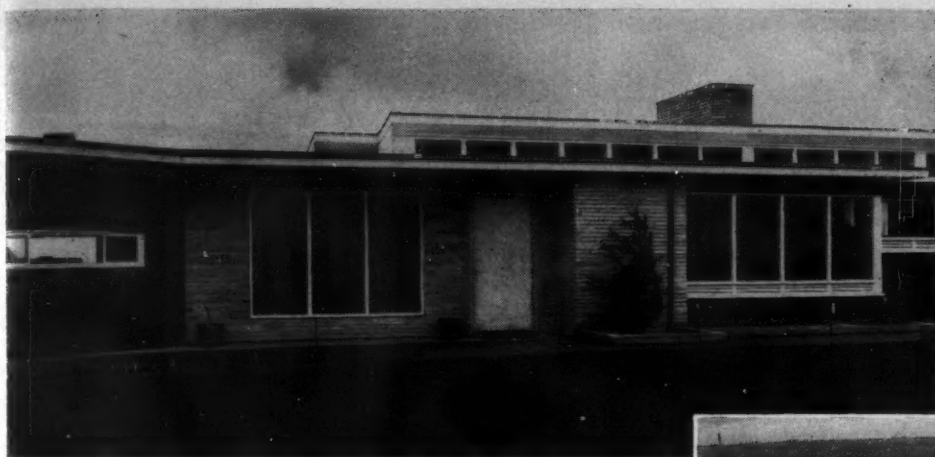
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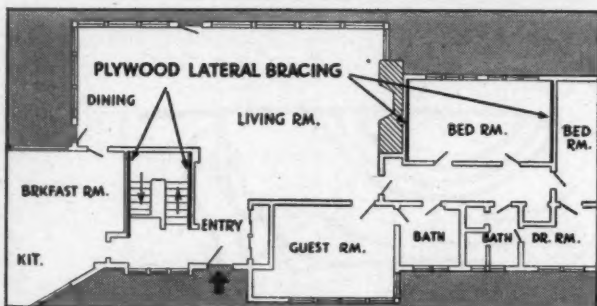
Right: Plywood forms in place preparatory to pouring porch deck which creates an overhang for terrace below. Big, versatile plywood panels were also used to form smooth surfaces for basement and foundation concrete—then re-used for sheathing and subflooring. Wall sheathing and subflooring is  $\frac{5}{8}$ " thickness. Roof sheathing is  $\frac{1}{2}$ ". Owner-designer is Charles T. Pearson of the architectural firm of Lea, Pearson and Richards, Tacoma.



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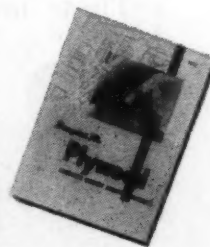
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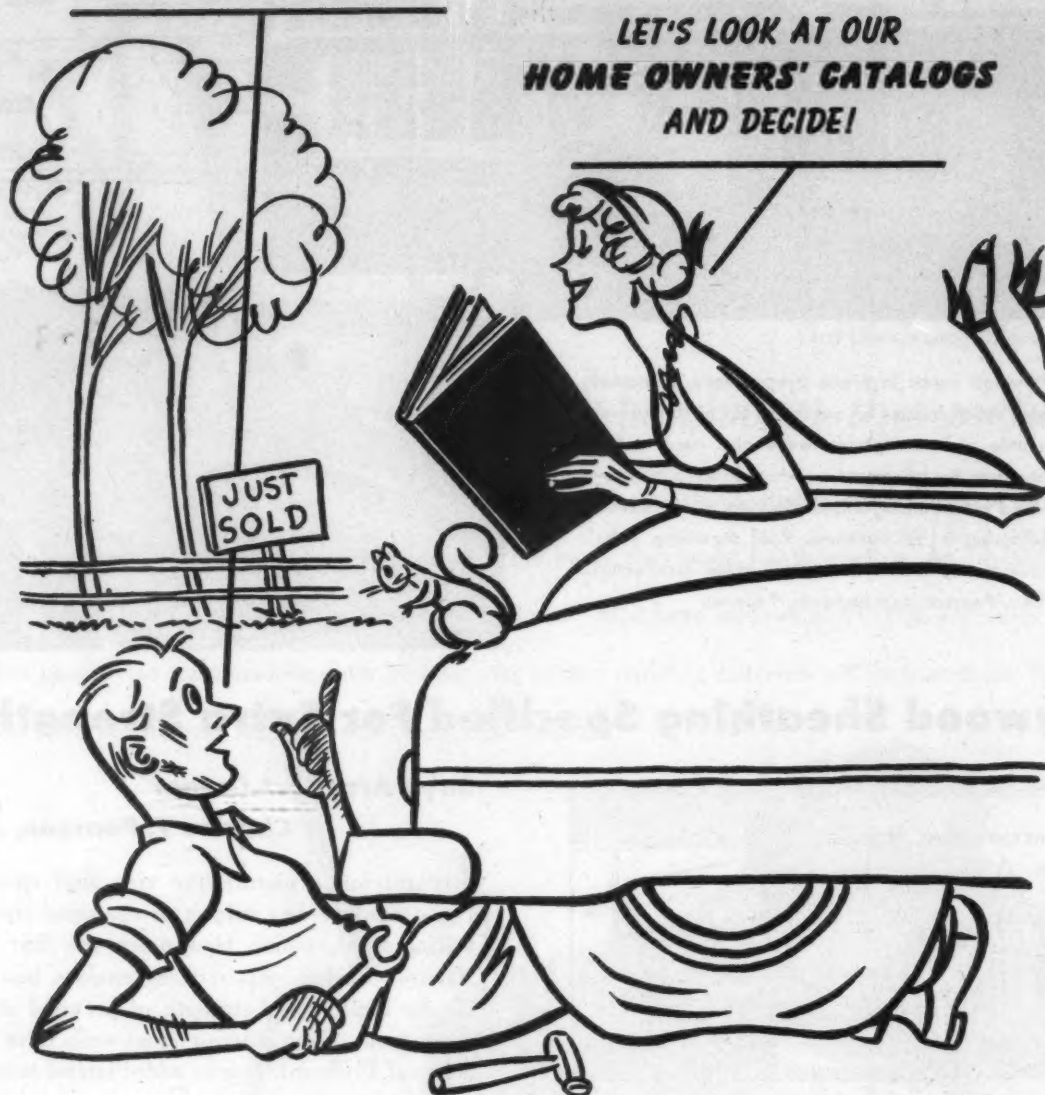
For detailed information, see Sweet's File, Architectural, or write for 1951 Basic Plywood Catalog. Single copies free to architects, builders, dealers anywhere in the U.S. Douglas Fir Plywood Association, Tacoma 2, Wash. Field Offices: 848 Daily News Bldg., Chicago 6; 1232 Shoreham Bldg., Washington 5, D. C.; 500 Fifth Ave., New York City 18.





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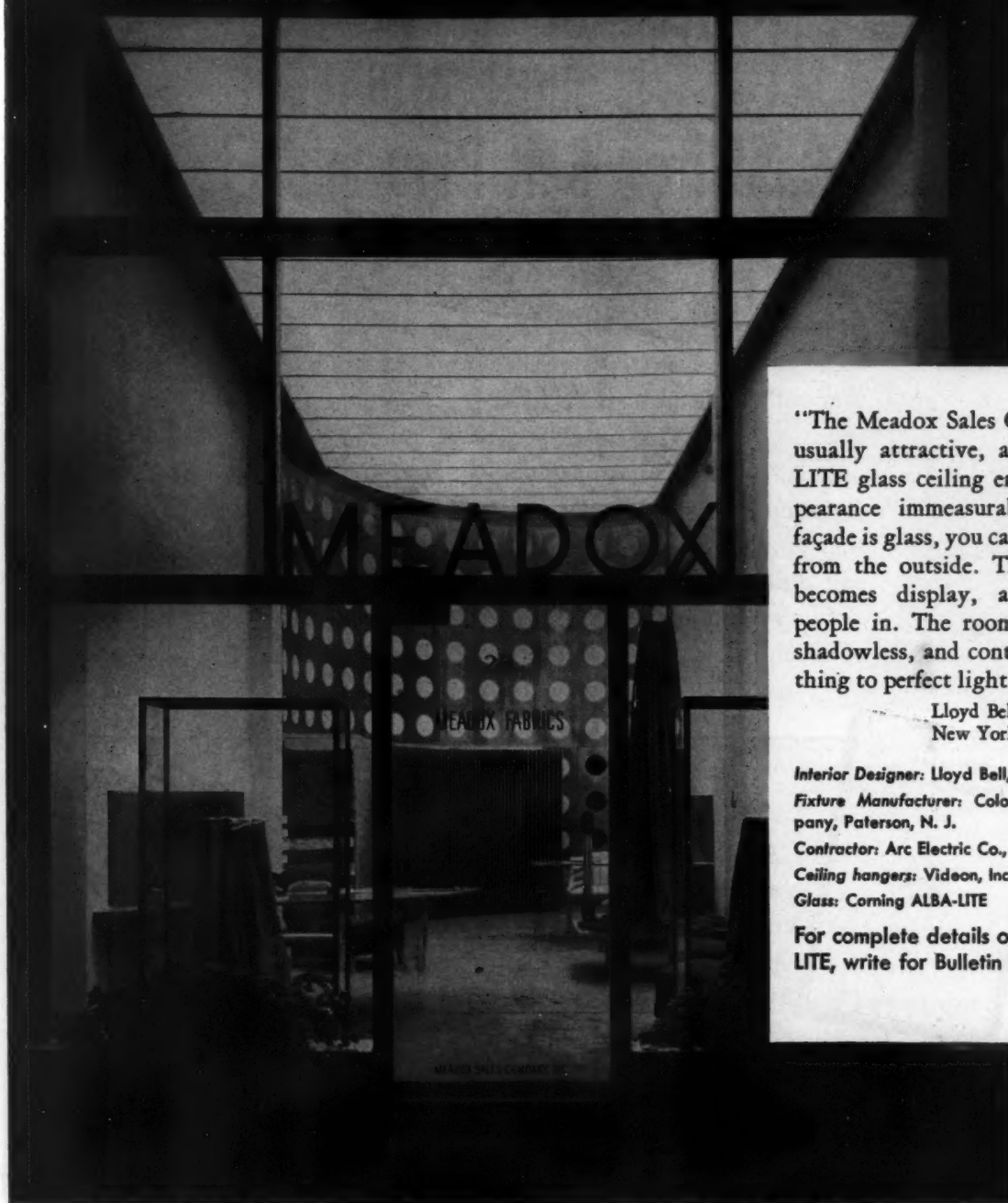
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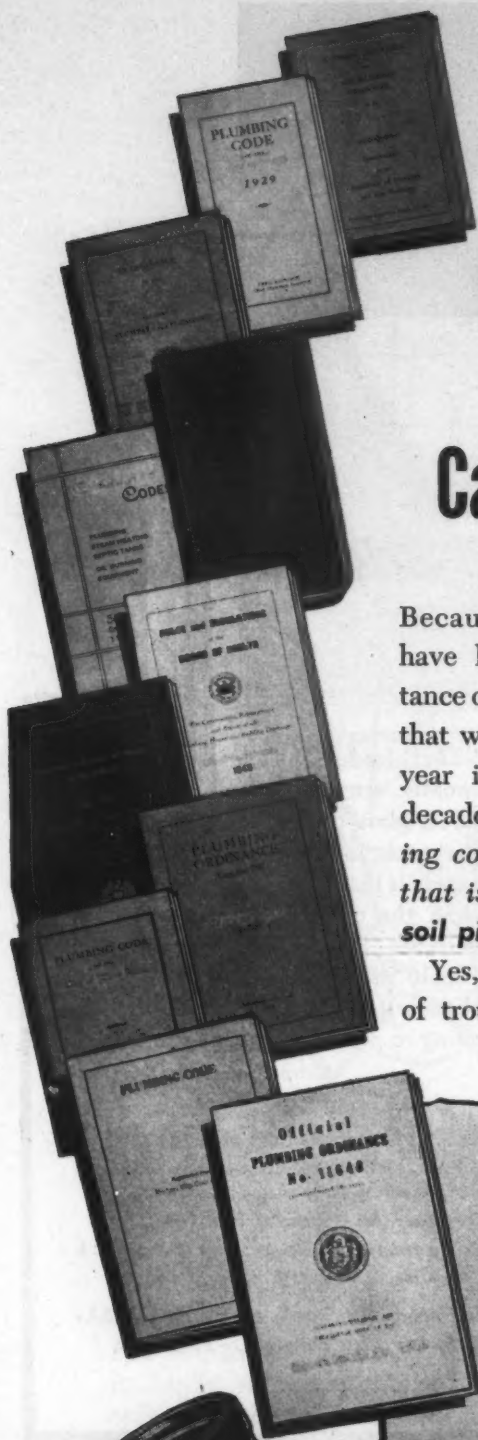
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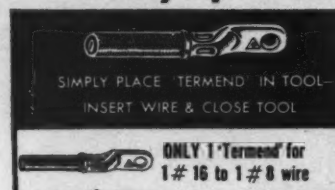
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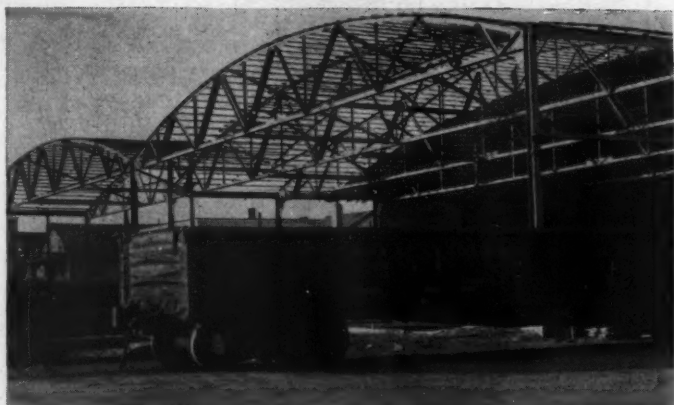
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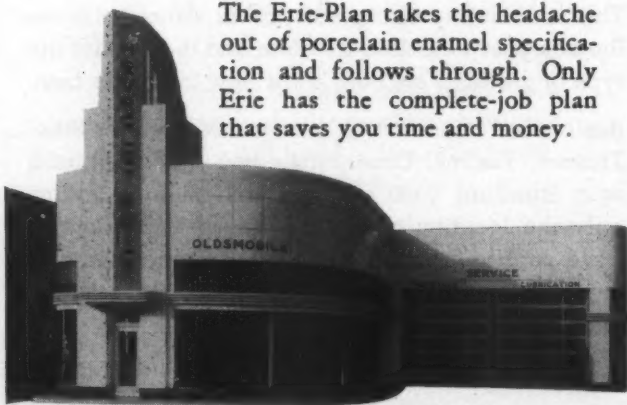
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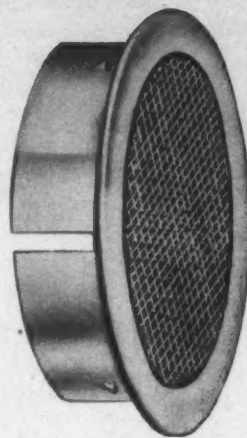
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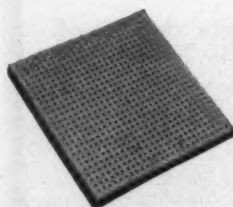
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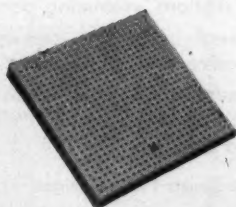
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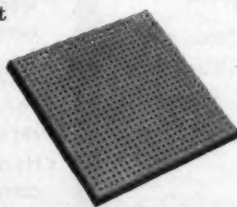
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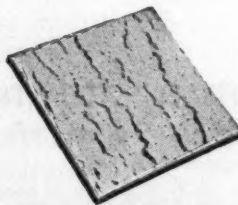
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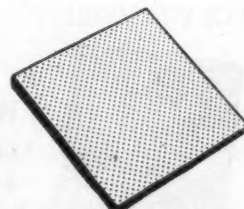
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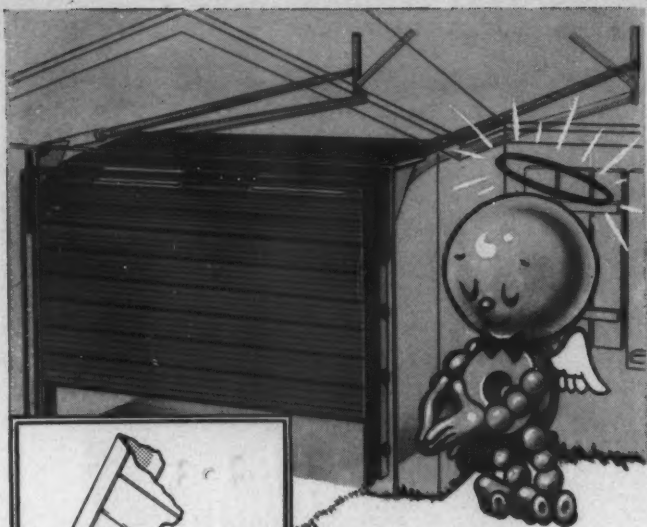


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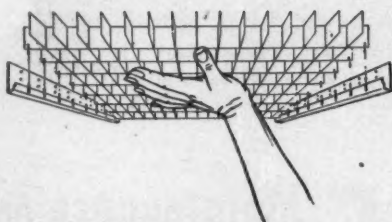
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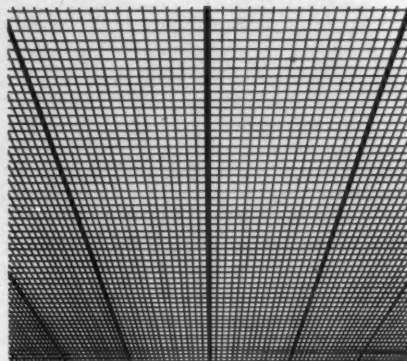
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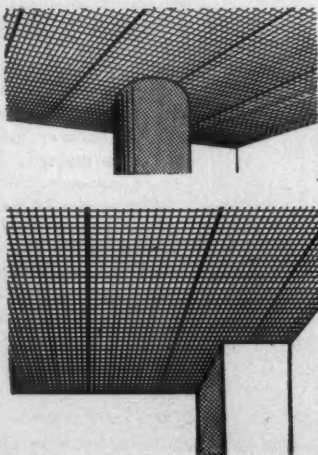
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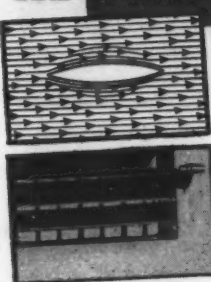
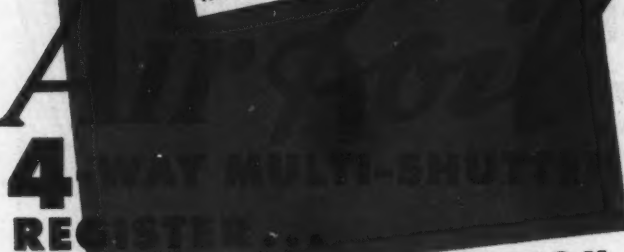
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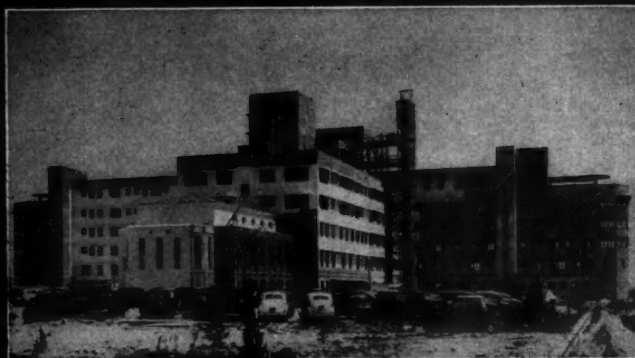
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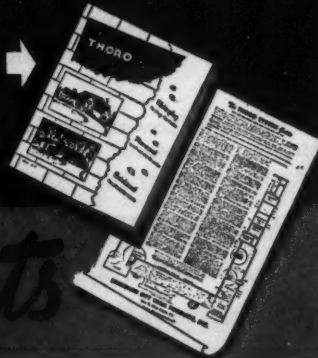
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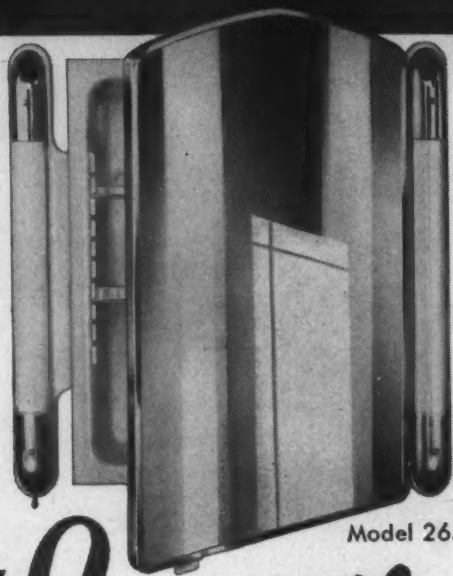


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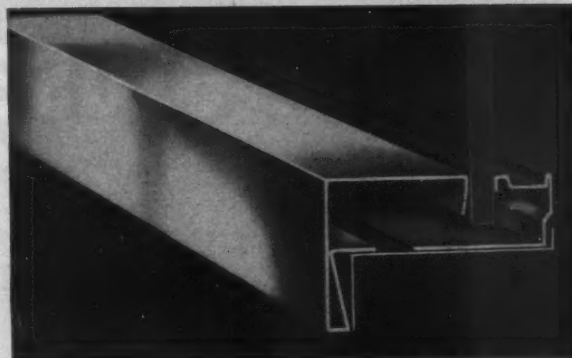
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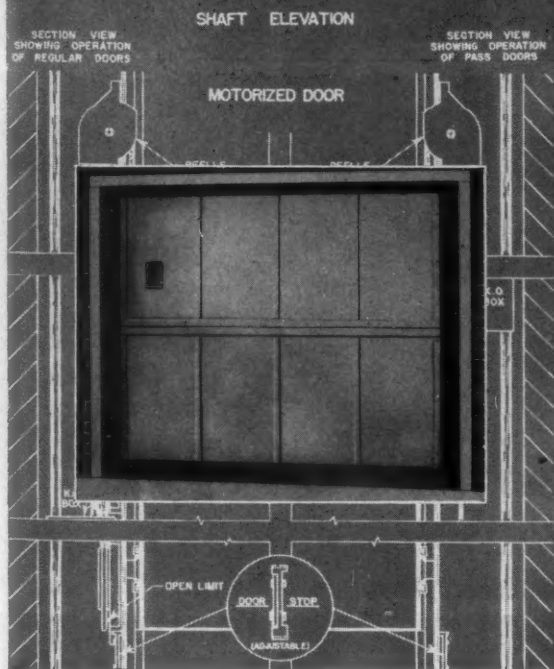
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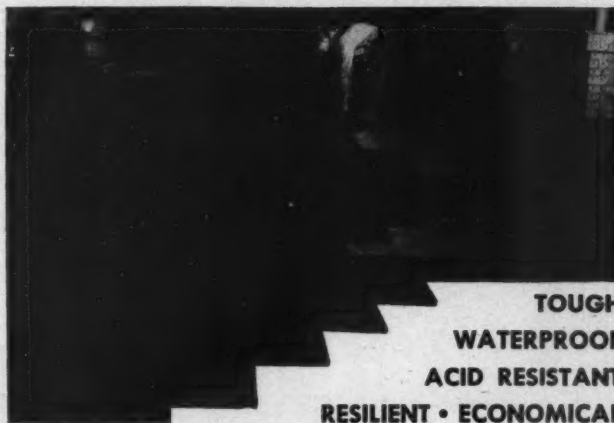
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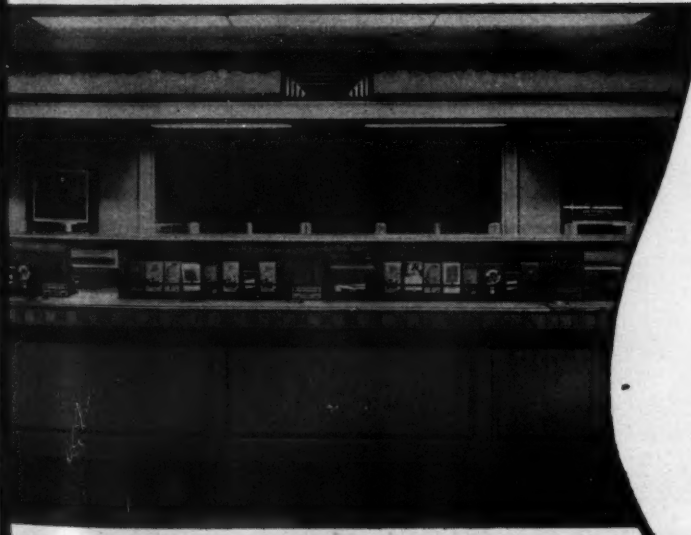
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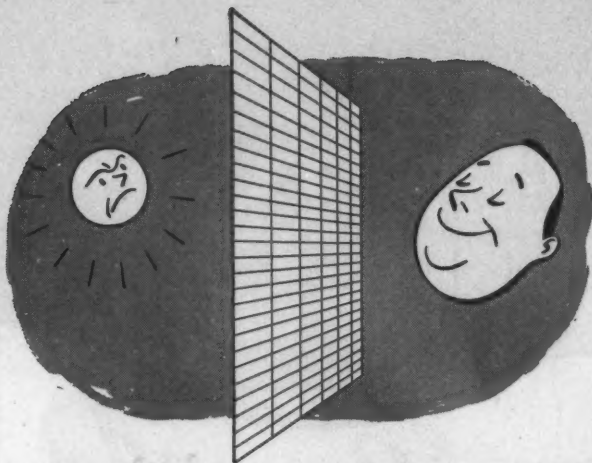
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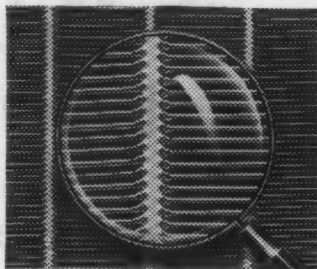


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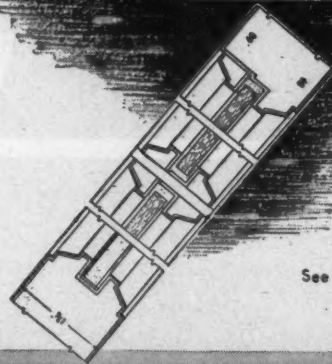
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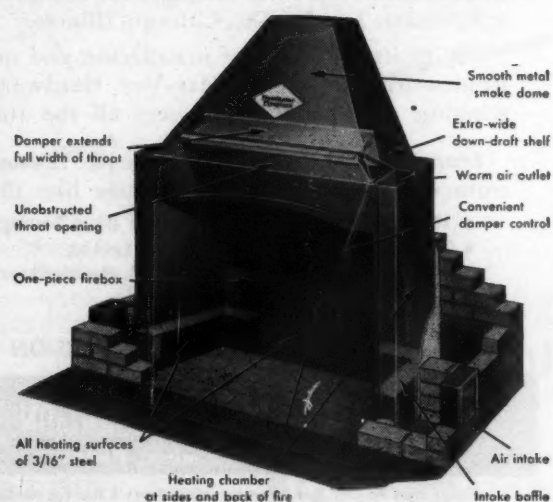
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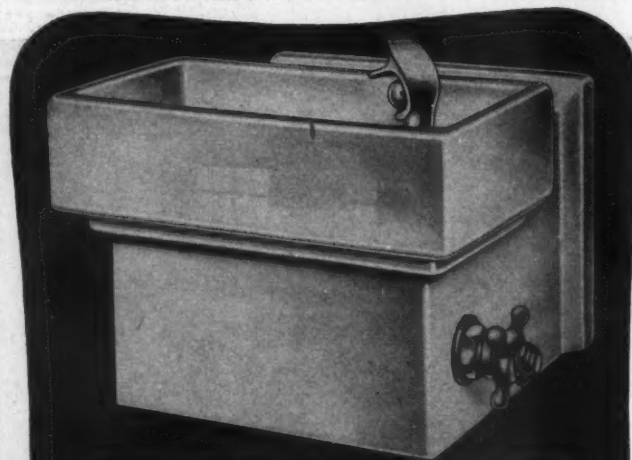
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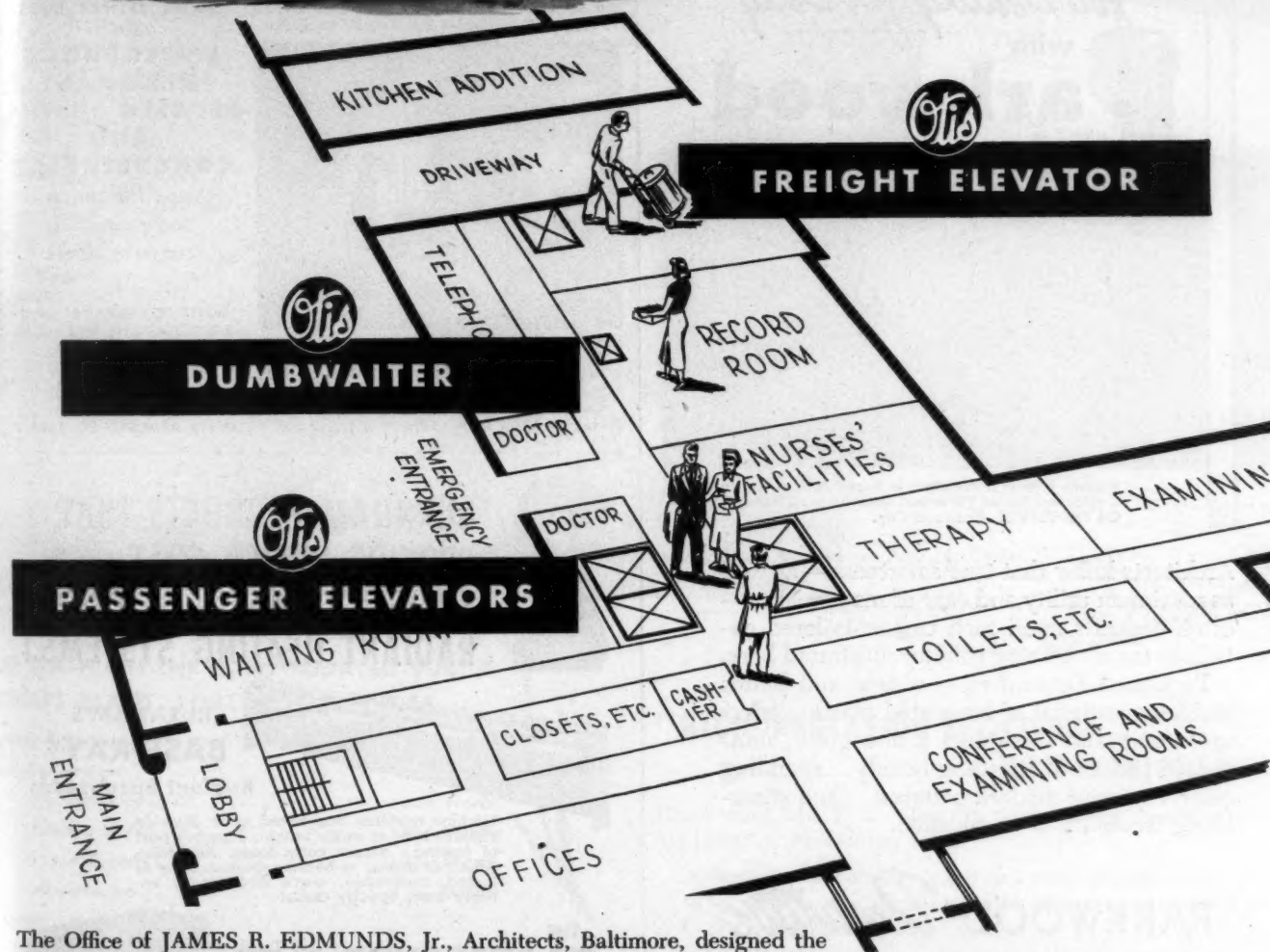
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The Office of JAMES R. EDMUNDS, Jr., Architects, Baltimore, designed the new Psychiatric Institute as a mental hospital and teaching unit for the existing University of Maryland Hospital. Initial construction includes Ground and Grade floors, six full floors, a partial seventh—with provisions for eleven floors, when needed. • OTIS "Hospital-Quiet" Elevatoring includes—3 PASSENGER ELEVATORS: Sound-isolated. Hospital-size cars with automatic doors. Micro "two-way" self-leveling. 500 ft. speed. Gearless machines. Automatic group operation, with or without attendants. This service will be extended from the 8th to 11th floor, and a fourth car added, when the structure is enlarged. DUMBWAITER: Sound-deadened. Automatic "Call and Send" operation directly between Grade and 2nd floor Record Room. FREIGHT ELEVATOR: Electric. Machine located below to save headroom. Push button operation between Grade and Ground floors. Handling refuse, shop equipment. • Elevator maintenance will be simplified by integrating this new elevatoring with the 4 OTIS Passenger Elevators and 6 Dumbwaiters that have been giving excellent service in the main hospital since 1933. For further details see SWEET'S Architectural File. Or, call your local OTIS office. Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.

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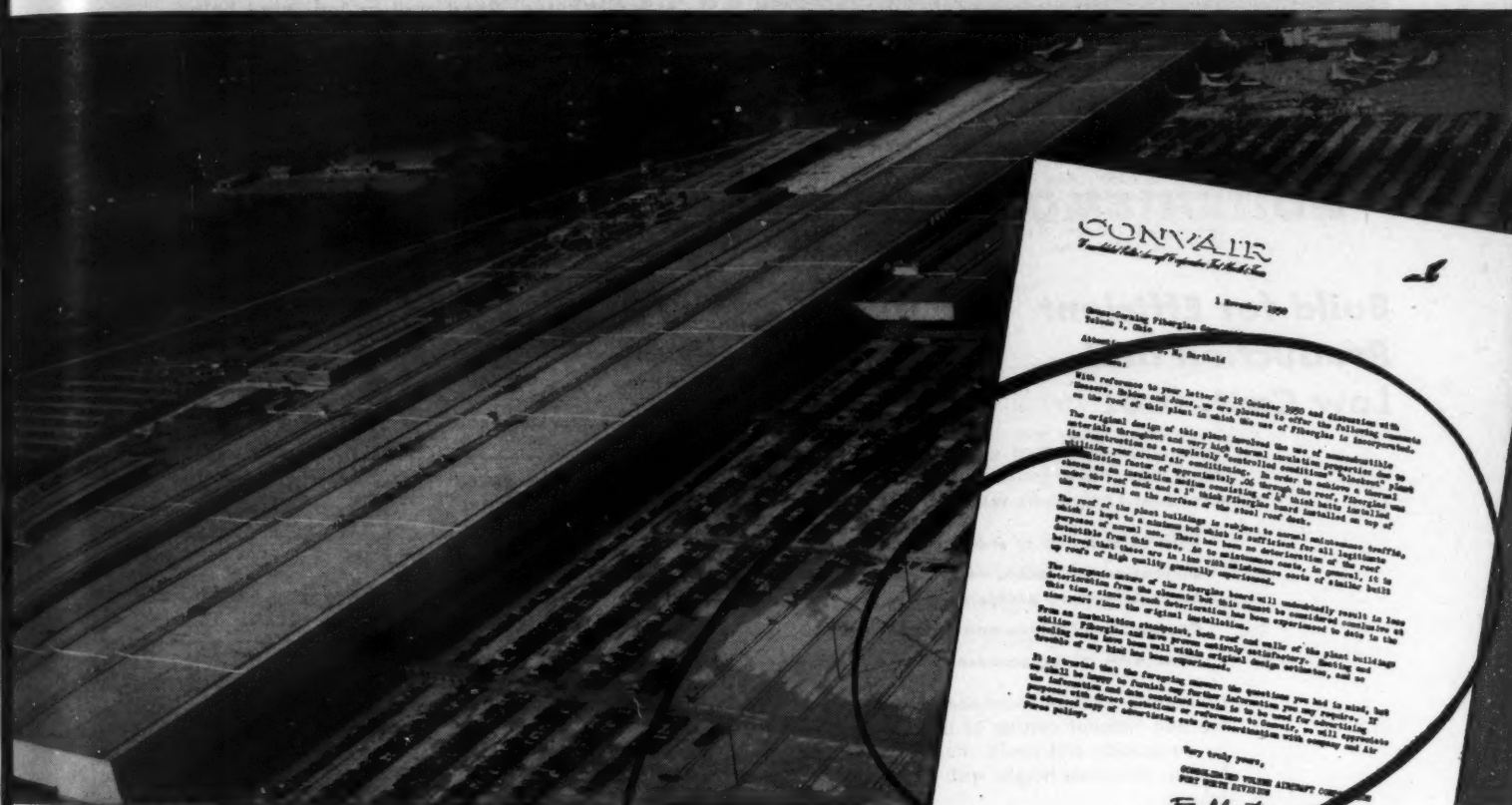
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Lydick Roofing Co..... Fort Worth  
Macatee, Inc..... Dallas

Roof Deck: Steel

Roof Insulation: 1,294,000 sq. ft. of Fiberglas Roof Insulation

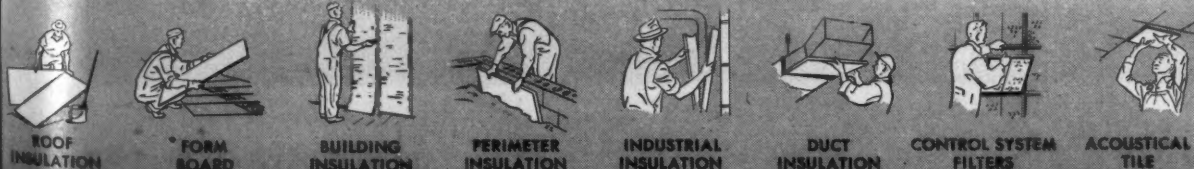
Roofing: 4-ply pitch and gravel..... 20-year Bond

OWENS-CORNING  
**FIBERGLAS**

ROOF  
INSULATION

\*Fiberglas is the trade-mark (Reg. U. S. Pat. Off.) of the Owens-Corning Fiberglas Corporation for a variety of products made of or with fibers of glass.

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### NO DETERIORATION!"

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With rapid installation and conservation of fuel again gaining in importance, you can specify Fiberglas Roof Insulation with confidence. For complete information write for "The Design of Insulated Roofs" (a 36-page manual) or refer to Sweet's Files—Architectural. Owens-Corning Fiberglas Corporation, Dept. 68-B, Toledo 1, Ohio. Branch offices in principal cities.







Grange Cooperative Warehouse, Spokane, Washington, dimensions 165' x 150'. Roof is placed on top of cantilevered glued laminated girders on 16' centers. Three-inch tongue and groove wood roof sheathing is attached direct to top of girders; no purlins. Only two rows of posts in the entire building. Drawings show other applications.

## Build for Efficient Production and Low Cost, too!

Open floor areas required for efficient industrial production and low cost, permanent construction are both accomplished with glued laminated girders of Timber Structures, Inc. These girders are made of kiln dried structural Douglas fir material. They are:

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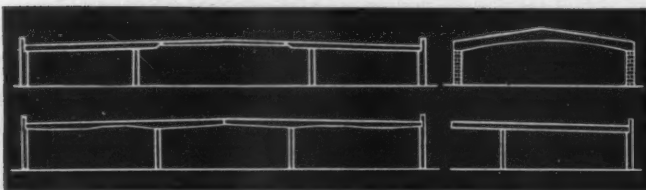
Dimensionally stable—no seasoning action, no maintenance problem.

Readily available—non-critical material.

Handsome in appearance when left exposed.

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# INDEX

## TO HELPFUL LITERATURE

The following list is published as a help to readers who want the latest authoritative literature on plumbing drainage products necessary for the protection of both the supply and drainage lines. Simply check "Items Wanted", and mail as indicated below.

1. Folder on roof, floor, and shower drains

5. Folder on backwater and sewer valves

2. Folder on LEVELEZE adjustable top floor drains

6. Folder on Moderator Shower Mixing Valves

3. Manual RA—specifications and roughing dimensions on all drainage products

7. Manual SP-3—a 32-page book on Swimming Pool Construction

4. Manual A—the complete treatise on grease interception

8. Folder on Shock Absorbers for Water Hammer

CHECK "ITEMS WANTED"

1 2 3 4 5 6 7 8

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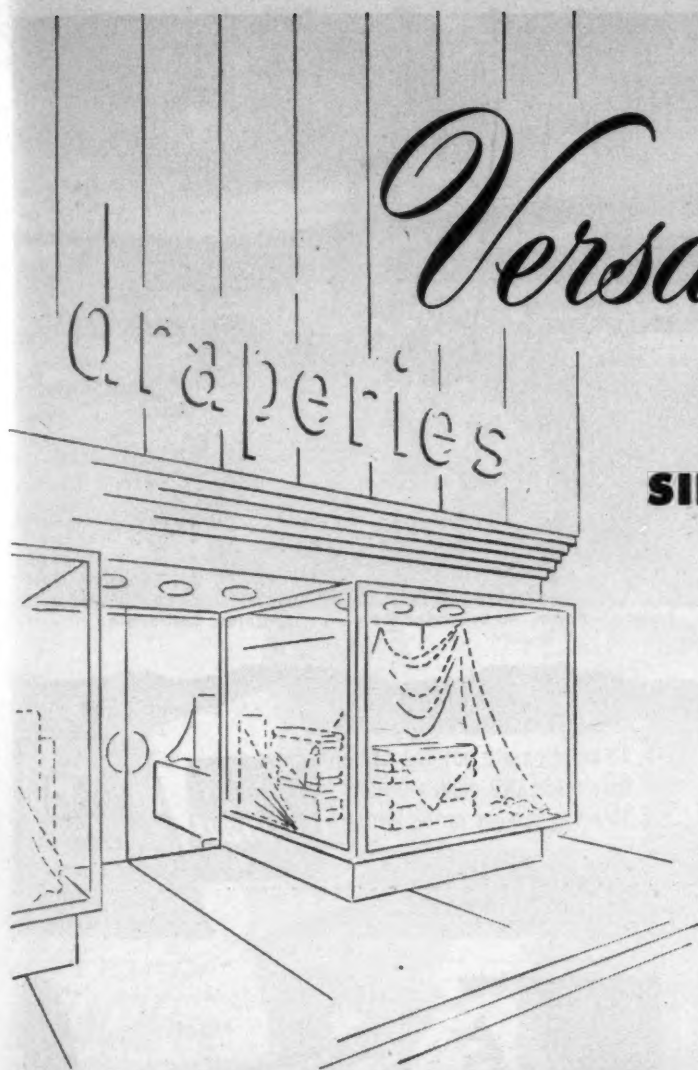
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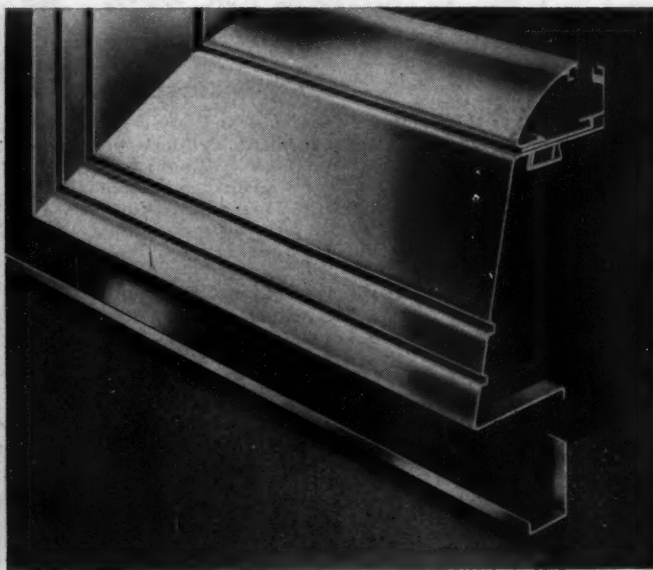
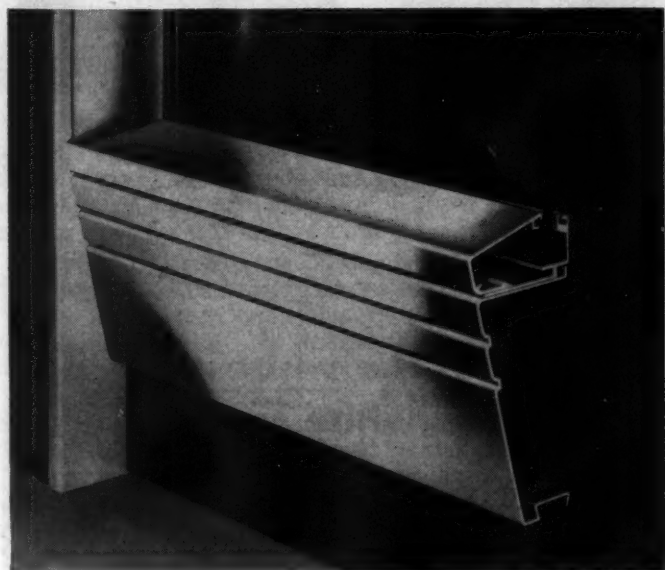
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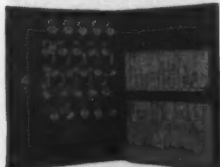
COFFEE SHOP

FOYER  
MASLAND DURA-LEATHER COMPANY  
DEPT. 34, PHILADELPHIA 34, PA.



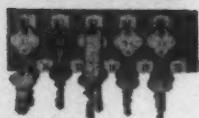
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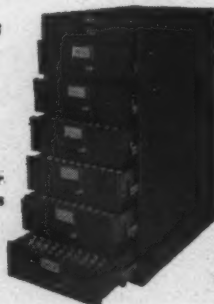
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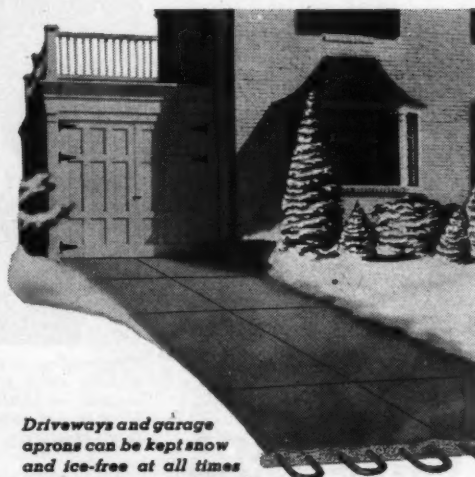
## Steel pipe is first choice for snow melting

A boy, a dog and a snow shovel are an irresistible combination for loosening heartstrings as well as purse-strings! The first snow brings the tinkling of the doorbell and the piping query, "Want your snow shoveled, mister?" Often a shy companion lurks just out of vision, hoping to share this first youthful adventure in capitalism.

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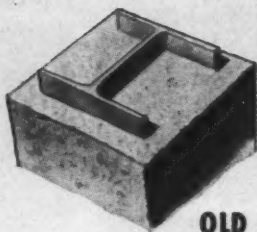
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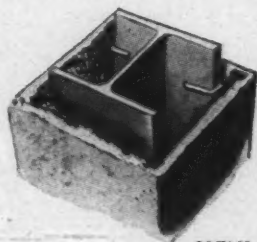
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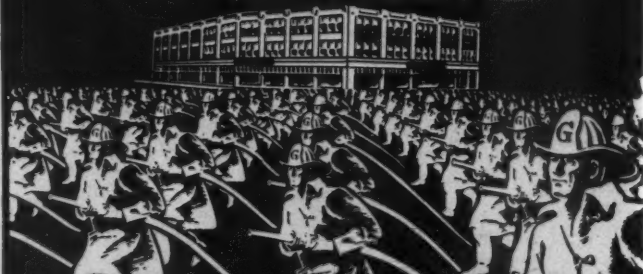
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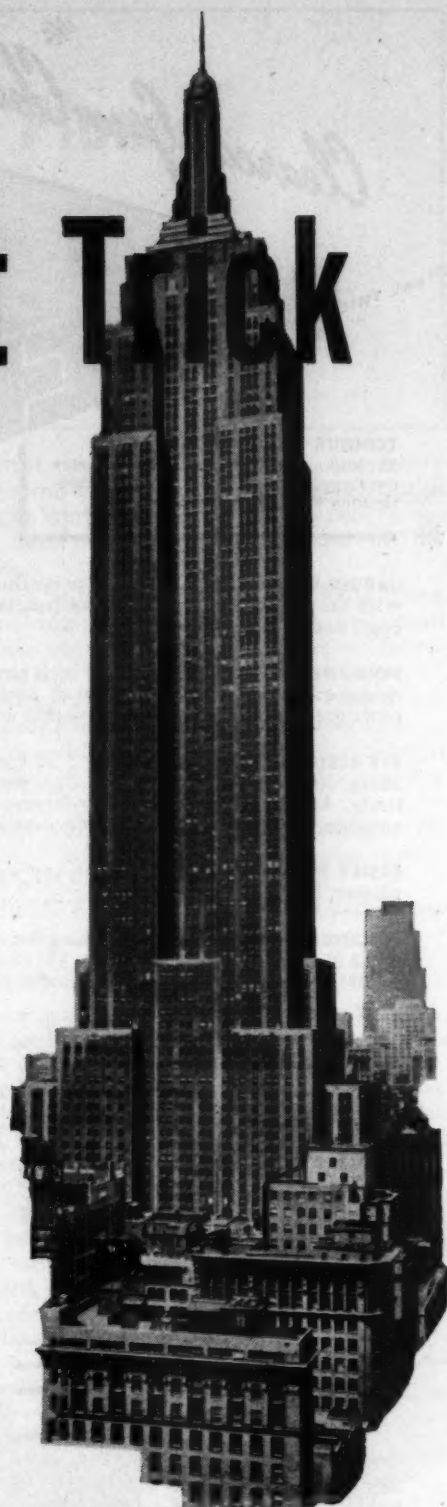
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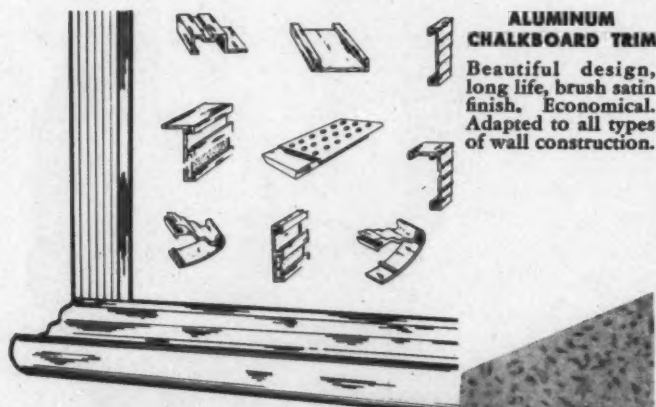
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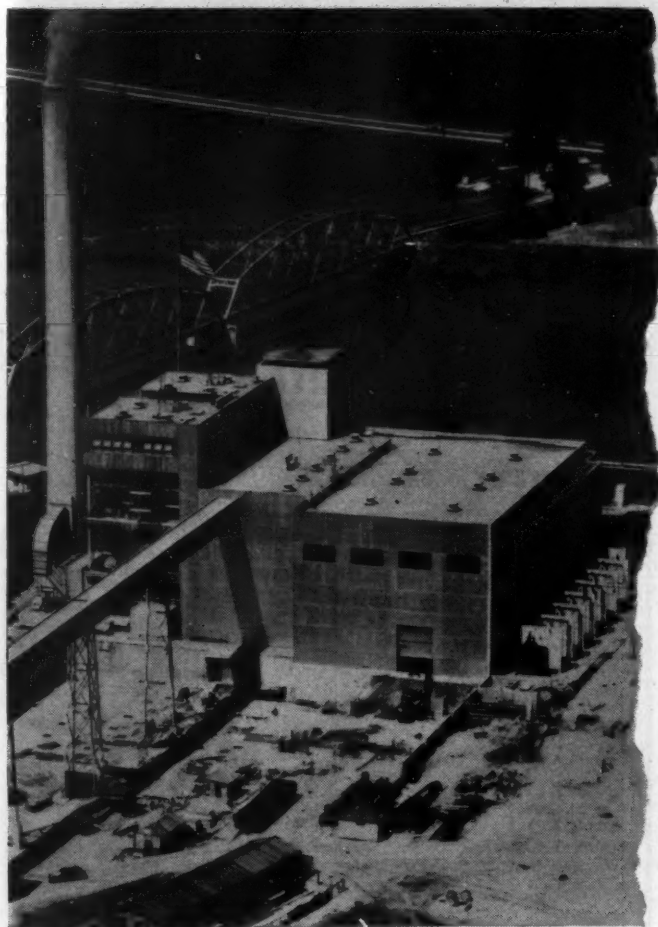
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Power plants must be *expandable*. So—if the future demands it—walls can stretch out to hold added equipment, i.e: The right wall of Fenestra\* "C" Panels in the building shown here was moved recently and will be moved again soon.

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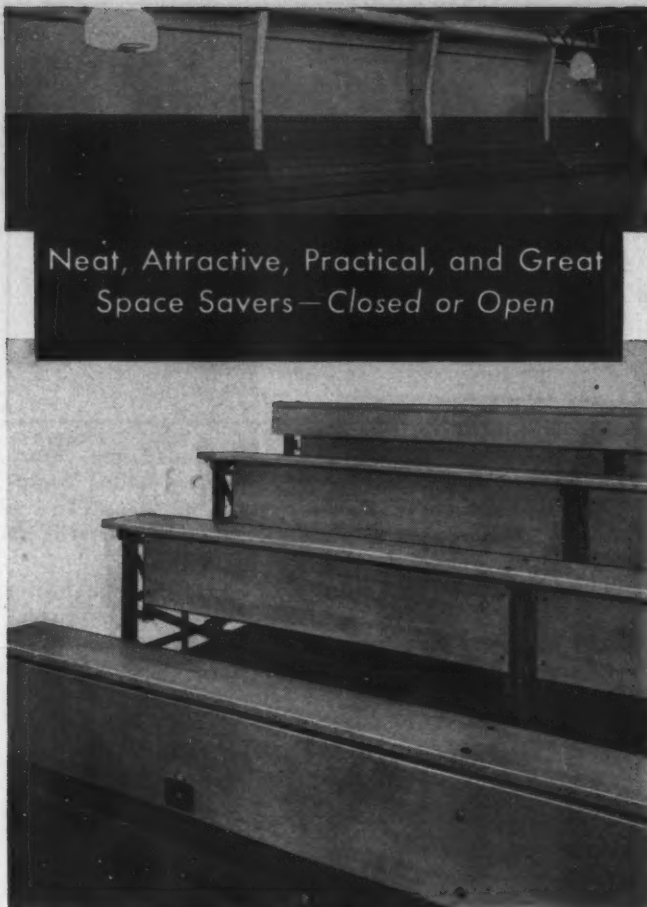
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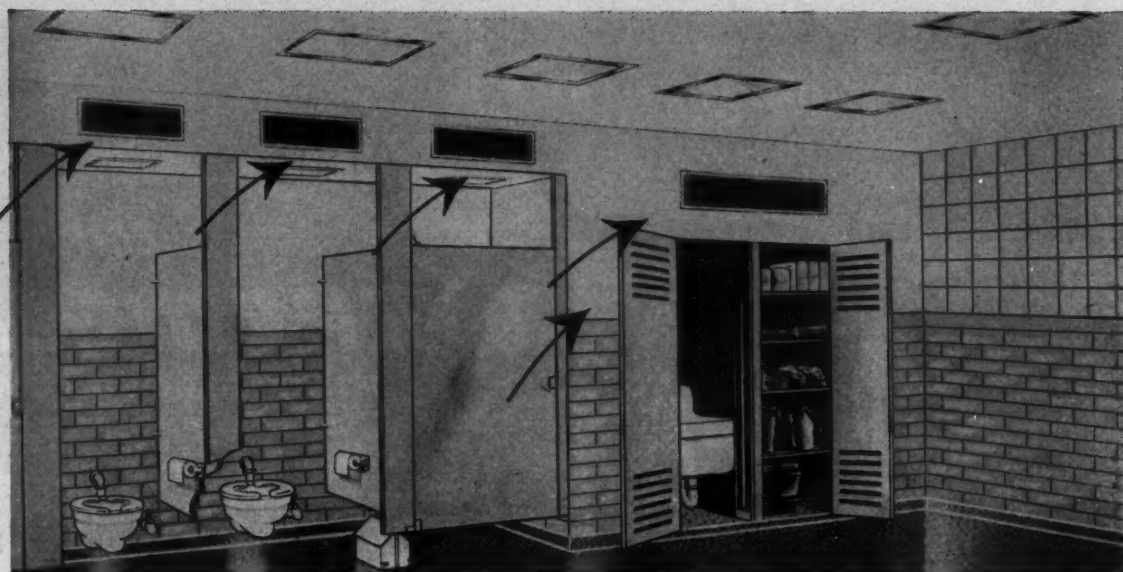
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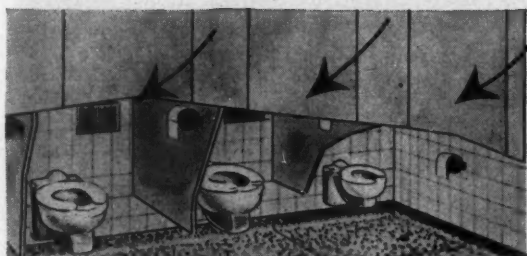
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For best air circulation, odor and fume removal . . . use adequate vents on storage locker doors, recessed exhaust vents high on the wall.

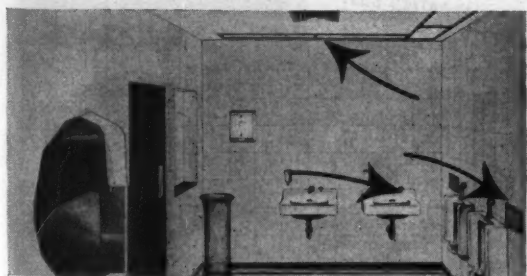


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can make or break a modern washroom



In large washrooms, recessed wall vents near each toilet remove odors quickly. Correct positioning is important for best results.



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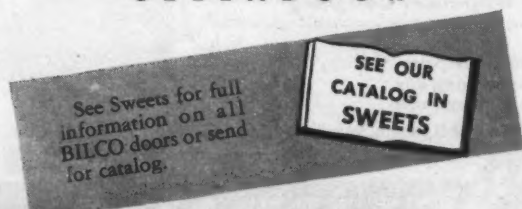
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CALL LOCAL TREMCO MAN—OR WRITE

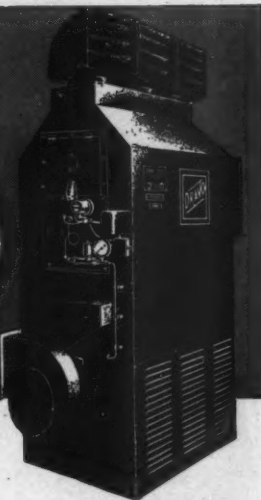
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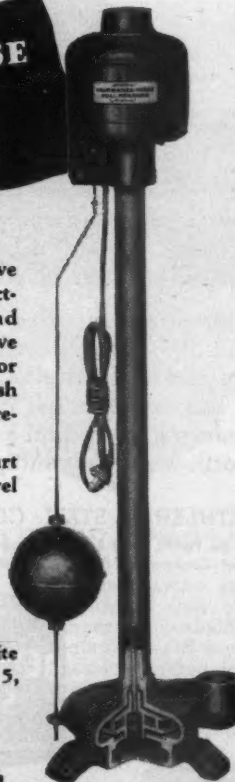
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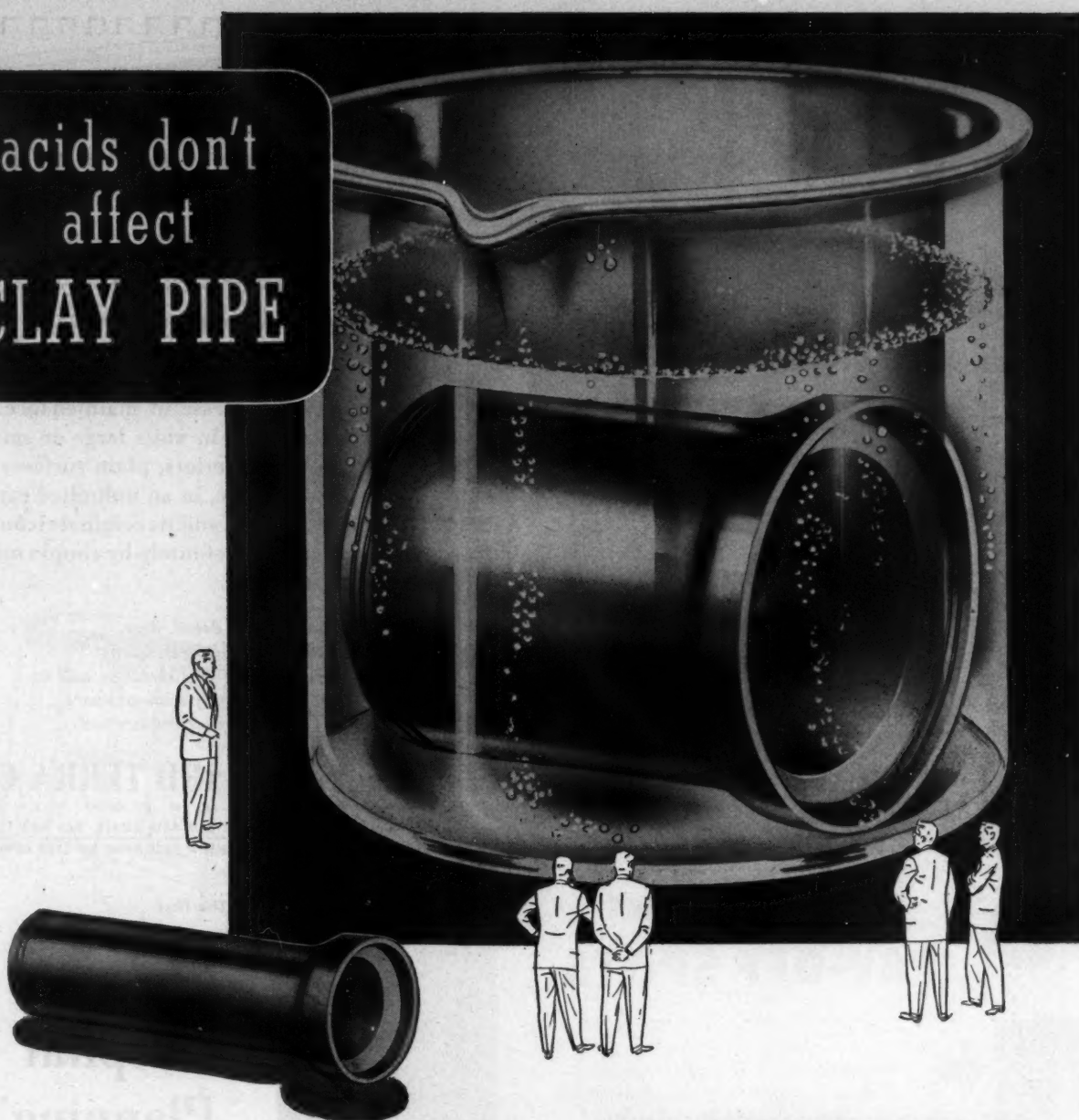
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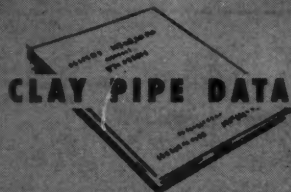
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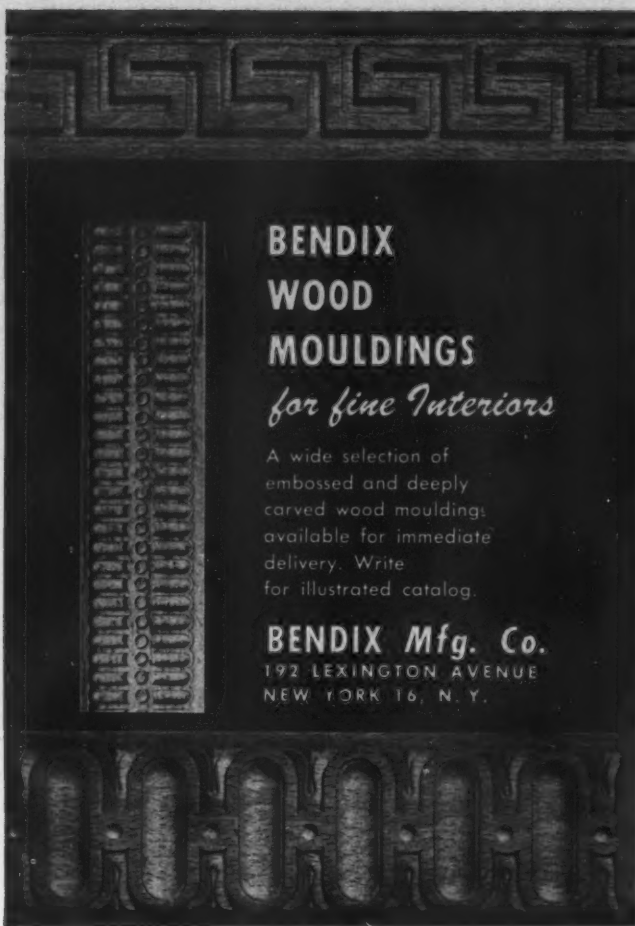


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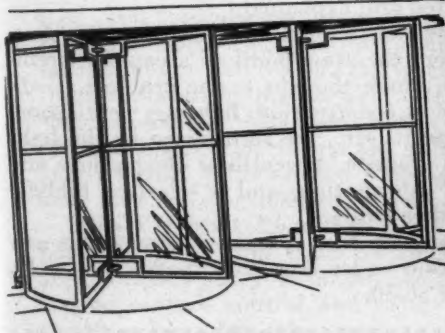
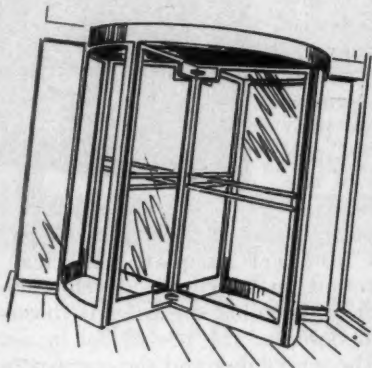
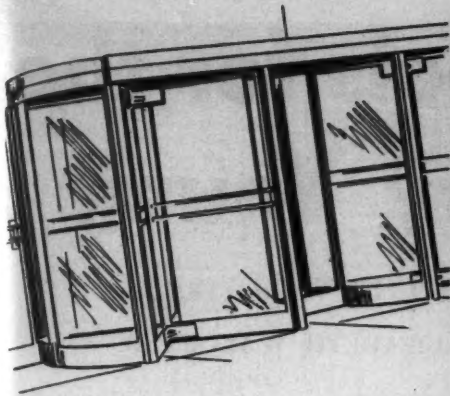
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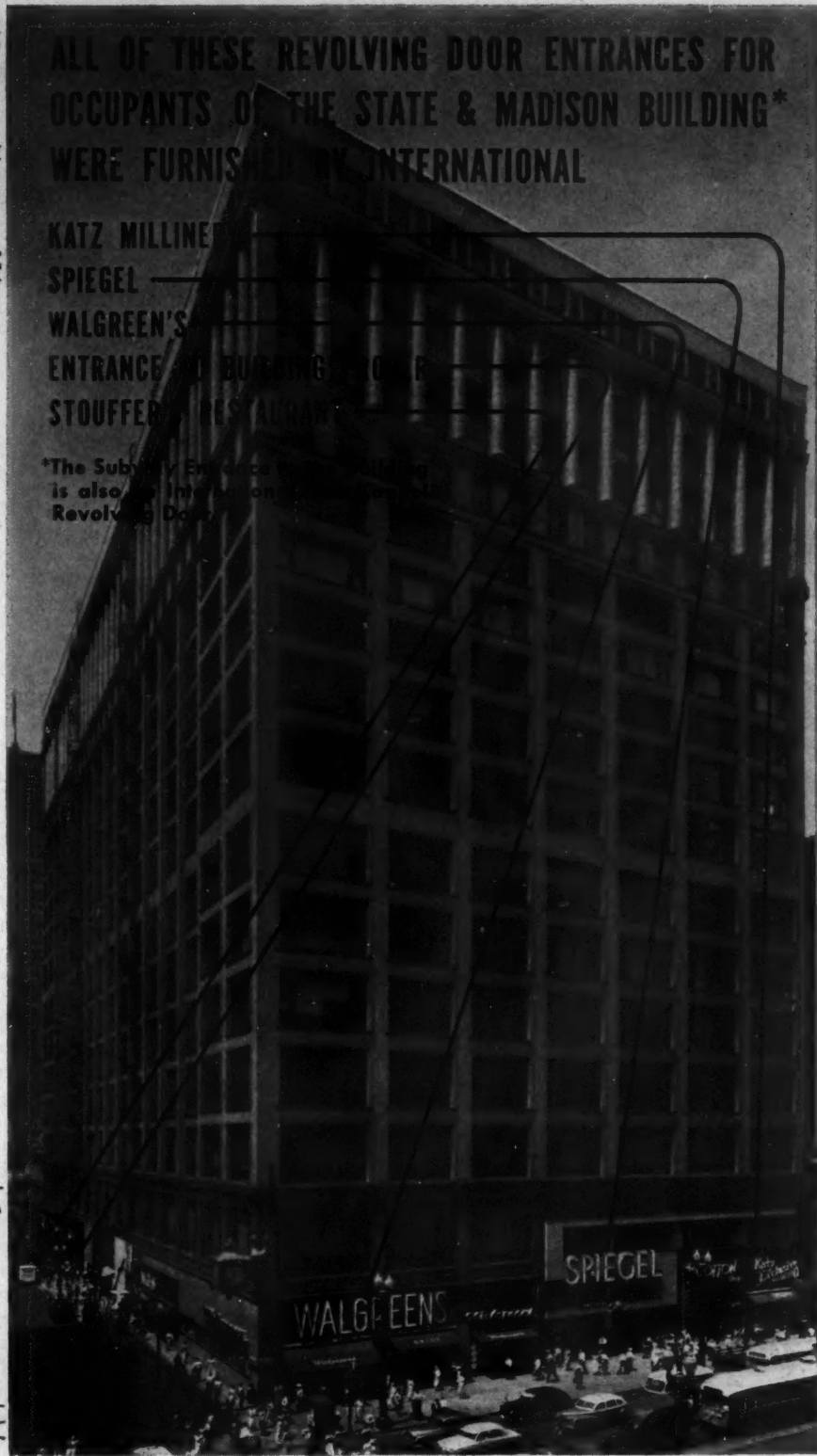
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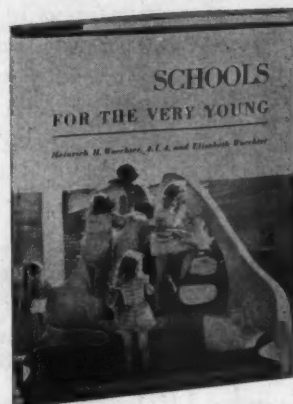
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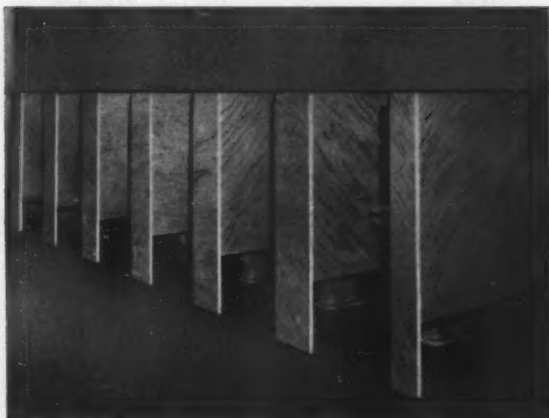


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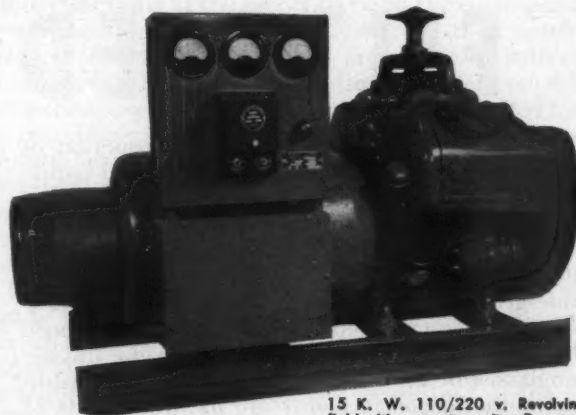
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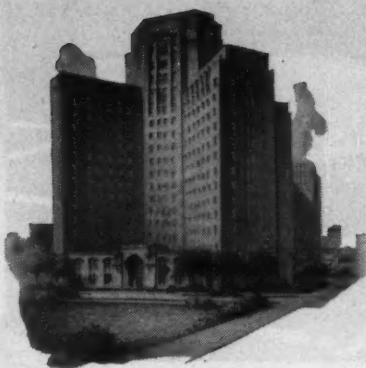
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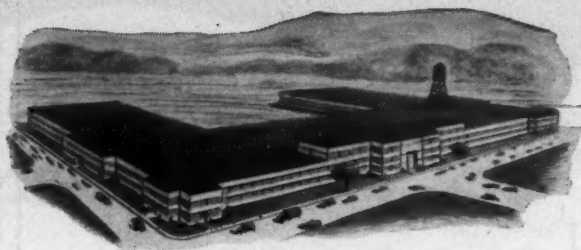
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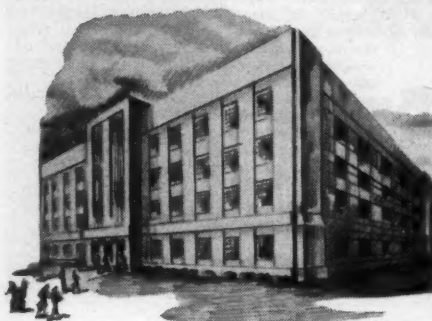


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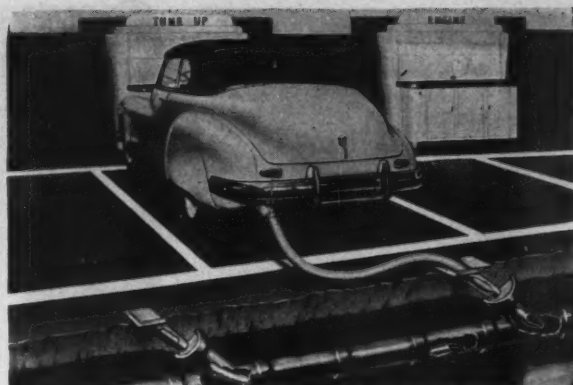
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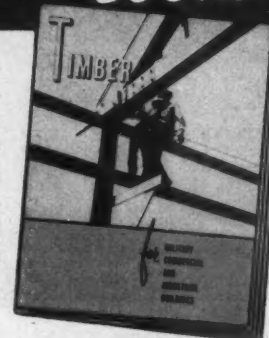
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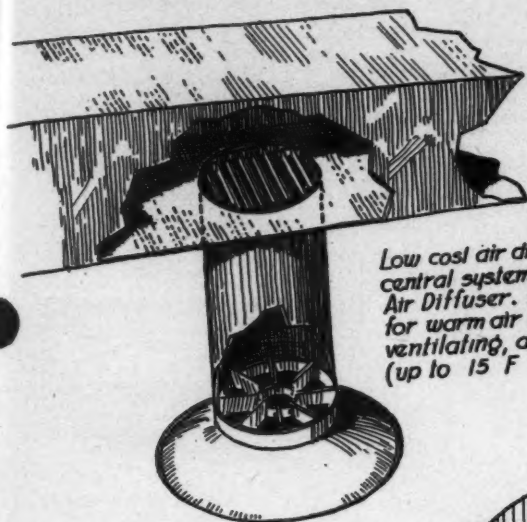
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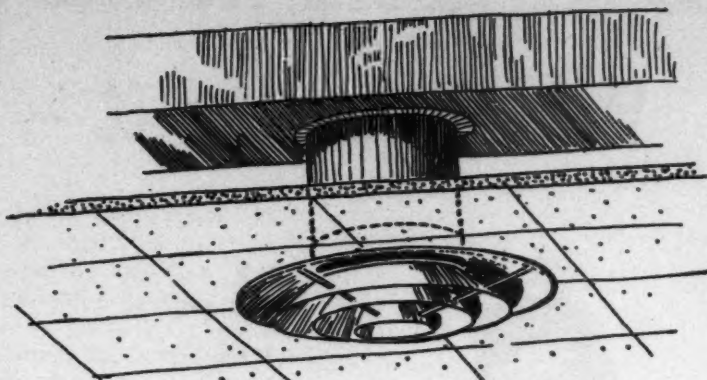
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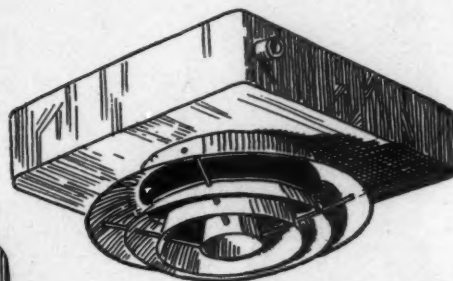
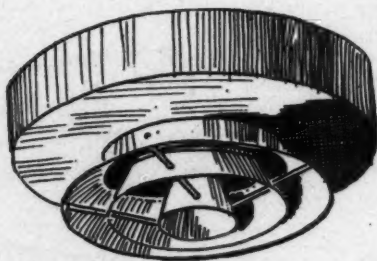
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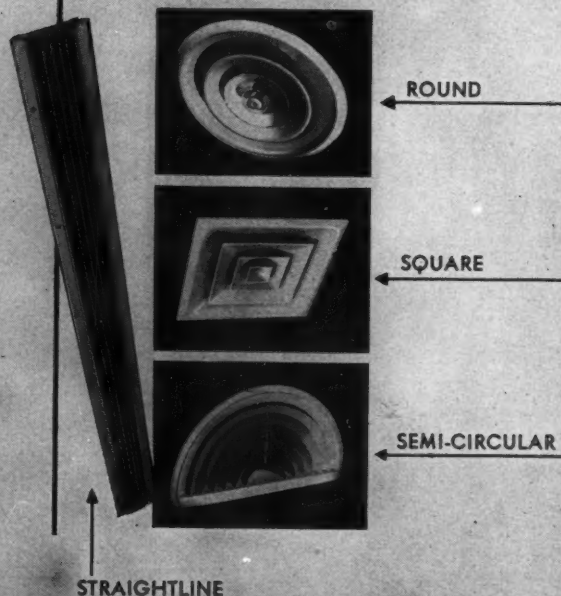
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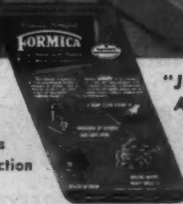
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